

NOTES ON PAPUAN BIRDS.

BY THE HON. WALTER ROTHSCHILD, PH.D., AND ERNST HARTERT.

(Continued from p. 88.)

(Plate IV.)

III. COLUMBAE.

THE GENUS PTILINOPUS.

1. *Ptilinopus superbus* (Temm. & Knip).

Of this widespread pigeon we have specimens from the following localities :—

Queensland ; Wanambai (Webster), Kobroor (Kühn), Trangan (Kühn), Aru Islands ; between the rivers Laroki and Vanapa (Weiske), Sogeri (Forbes), British New Guinea ; Simbang, Kaiser Wilhelm's Land (Nyman) ; Anday (Bruijn) ; Takar (Doherty) ; Kapanr (Doherty) ; Yule Island ; Dorey (Doherty) ; Yamna Island (Doherty) ; Jobi (Doherty) ; Ron Island (Doherty) ; Mysol (Kühn) ; Ternate (Guillemard) ; New Ireland, New Hanover, Duke of York Islands ; Halmabera (Doherty) ; Goodenough, Woodlark, Fergusson, Trobriand, and Louisiade Islands (Meek). Altogether 75 skins.

We are unable to separate any subspecies of this species. There seem to be no constant differences in size, markings, or colouration.

2. *Ptilinopus pulchellus* (Temm.).

We have this pretty bird from Oriori (Anthony), Milne Bay (Meek), between rivers Laroki and Vanapa, and other places in South-Eastern New Guinea ; Etna Bay (Webster) ; Fly River (D'Albertis), Amberbaki, Arfak, Kapaur, Takar, Ron Island (Doherty) ; Waigiu (Guillemard) ; Konstantinhafen (Kubary). There are considerable differences in size and in the colouration of the under tail-coverts ; but they seem to occur in all localities, so that we cannot at present separate any subspecies.

The "*Ptilopodiscus* group" of the genus *Ptilinopus* consists of one species, which is separable into five subspecies.

3. *Ptilinopus coronulatus coronulatus* Gray.

General colour dark green with a faint golden shine. Pileum rosy-lilac. Abdomen with a lilac-violet patch, which is sometimes slightly tinged with saffron-colour towards the vent. Vent and under tail-coverts bright lemon-yellow.

Aru Islands and South-East New Guinea. We have :—

2 ♂ Trangan, Aru Islands (H. Kühn coll.). "Iris orange-red. Feet bluish-carmine. Bill pale green."

1 ♂ Kobroor, Aru Islands (H. Kühn coll.).

1 ♂ Wokan, Aru Islands (H. Kühn coll.).

2 ♂ (?) Dobbo, Aru Islands (Capt. C. Webster coll.).

♀ Naiabui, South-Eastern New Guinea (D'Albertis and Tomasinelli coll.).

2 Brown River, South-East New Guinea (E. Weiske coll.).

1 ♂ Kabadi, South-East New Guinea (E. Weiske coll.).

It seems that the specimens from South-Eastern New Guinea have as a rule the under tail-coverts and vent slightly brighter yellow, the green a slight bit more yellowish. If a larger series should prove that this is correct, the form would require a new subspecific name.

4. *Ptilinopus coronulatus huonensis* A. B. Meyer.

Like *P. coronulatus coronulatus*, but the lilac abdominal patch slightly larger and deeper in colour, vent and under tail-coverts darker, more orange-yellow, the crown a little darker.

Huon Gulf to Collingwood Bay and Milne Bay. We have the following five specimens :—

♀ Simbang, Kaiser Wilhelm's Land (E. Nyman coll.).

♂ ♀ Collingwood Bay (A. S. Meek coll.).

♂ ♀ Milne Bay (A. S. Meek coll.).

5. *Ptilinopus coronulatus trigeminus* Salvad.

Differs from the former two in having the pileum much paler, and the purple abdominal patch largely surrounded by an orange or saffron colour. North-West New Guinea and Salwatty Island. We have no specimen of this form.

6. *Ptilinopus coronulatus geminus* Salvad.

Like *P. c. trigeminus* ; but the crown is still lighter, almost whitish.

Jobi Island and north coast of New Guinea. We have the following specimens :—

3 without labels, but probably obtained by Bruijn's hunters on Jobi.

♂ ♀ Jobi (Bruijn coll.).

2 ♀ Marai, Jobi (W. Doherty coll.). " Iris orange ; feet beet-red ; claws dull grey ; bill all olive-green."

♀, " Côte est, 136." (From Bruijn's hunters.)

One bought by Doherty at Waropen.

3 Takar (W. Doherty coll.).

7. *Ptilinopus coronulatus quadrigeminus* A. B. Meyer.

Said to differ from *P. c. geminus* in having the sides of the head and throat more grey, the latter showing hardly a hue of yellowish in the middle, in the purple line bordering the crown in front of the yellow line being absent, and the under tail-coverts being more intensely yellow. Shores of Astrolabe Bay, Kaiser Wilhelm's Land.

We have now before us, through the kindness of Count Berlepsch, four specimens from Konstantinshafen and Stephansort, and we find that the only good distinguishing character is the greyish throat and sides of head, the yellow line in the middle of the throat being almost quite absent. The purple line on the hinder crown is not absent, but slightly narrower. The under tail-coverts are not perceptibly darker or more intense than in *geminus*.

8. *Ptilinopus iozonus iozonus* Gray.

Aru Islands and South-Eastern New Guinea. We have a series of 16 skins from the following places:—

2 from Dobbo, Aru (Captain C. Webster coll.).

1 ♀ Trangan, 1 ♂ Wokan, 1 ♂ Kobroor, Aru Islands (Heinrich Kühn coll.).

4 specimens Brown River, British New Guinea (Emil Weiske coll.).

1 ♂ Milne Bay (A. S. Meek coll.).

1 ♀ Collingwood Bay (A. S. Meek coll.).

1 ♂ Naiabui (D'Albertis coll.).

4 specimens of uncertain origin.

Dr. v. Madarasz * has described as a new species, from Kaiser Wilhelm's Land, a specimen which he names *Ptil. biroi*. He has compared it with specimens from the same locality which he called *P. humeralis jobiensis*. His reason for doing so appears to be that these birds showed traces of the lilac shoulder-patch of *humeralis*, while otherwise they agreed with *jobiensis* of Schlegel. It is evident from this that Dr. v. Madarasz cannot have compared either of his specimens with *iozonus* of Gray. From his description and figure his *biroi* appears to be identical with *iozonus*; and we believe that the so-called *P. humeralis jobiensis* from Friedrich Wilhelmshafen are also old *males* of *iozonus*.

9. *Ptilinopus iozonus jobiensis* Schleg.

Jobi and northern coast of New Guinea, east of the Ambernoh River.

We have six specimens: three *females* from Ausus, Jobi (W. Doherty coll.), and three of unknown origin.

10. *Ptilinopus iozonus humeralis* Wall.

Salwatty, Waigiu, and North-West New Guinea to the Fly River.

We have only two specimens: one from Beccari's collections, one sent home by Bruijn.

11. *Ptilinopus insolitus* Schleg.

New Ireland, New Britain, Duke of York, and New Hanover Islands. We have 15 specimens:—

3 New Hanover (Captain C. Webster coll.).

2 New Britain (Kubary coll.).

2 New Ireland (?).

8 Duke of York Island (Th. Kleinschmidt coll.).

12. *Ptilinopus aurantiifrons* G. R. Gray.

Arn, New Guinea, Jobi, Batanta, Salwatty, and Mysol. 18 specimens are before us from:—

Collingwood Bay (Meek coll.), 3 ♂, 3 ♀.

Sorong, Dutch New Guinea, 1 ♀ (Bruijn coll.).

Etna Bay, 1 (Captain C. Webster coll.).

Serni, Jobi, 1 (Doherty, bought from natives).

* *Term. Füzetek*, xx. pt. 1. p. 47, pl. i. 1897.

Waropen, 1 (Doherty, bought from natives).
Dobbo, Aru, 4 (Captain C. Webster coll.).
Wokan, Aru, 3 (H. Kühn coll.), ♂, ♀, 1 ?.
Yule Island, 1 ♂ (D'Albertis coll.).

13. *Ptilinopus wallacei* G. R. Gray.

This is one of the most widely spread species of the genus. It occurs in Timorlant, Babber, Banda, South-East Islands, Key, and Aru. We have 26 specimens, as follows :—

7 Toeal, Little Key (H. Kühn coll.), 6 ♂, 1 ♀.
1 "Key" (Captain C. Webster coll.).
7 from the Koer Islands, South-East Islands (H. Kühn coll.).
1 Taam Island (H. Kühn coll.), ♂.
1 Manggoer (H. Kühn coll.), ♀.
6 Great Banda (H. Kühn coll.), 4 ♂, 2 ♀.
2 Larat, Timorlant (H. O. Forbes coll.), ♂ ♀.
1 Timorlant, from Dr. Riedel's hunters.

14. *Ptilinopus ornatus* Schleg.

North-West New Guinea. We have only one specimen from Hatam, Arfak (Bruijn coll.).

15. *Ptilinopus gestroi gestroi* D'Alb. and Salvad.

South-Eastern New Guinea to Kaiser Wilhelm's Land.

We have 4 specimens (3 ♀, 1 ♂) :—1 ♂, 1 ♀, Mt. Gayata, Richardson Range (? Weiske coll.); 1 ♀, Kotoi district (Anthony coll.); 1 ♀, Konstantinhafen (Kubary coll.).

16. *Ptilinopus gestroi kaporensis* subsp. nov.

This is a most distinct form, and most ornithologists would call it a good species. We unfortunately have only one ♀ specimen from Kapaur, collected by William Doherty in February 1892. It differs from *P. gestroi gestroi* in having the forehead and sinciput to beyond the eyes brownish-orange instead of a greenish olive-yellow; the remainder of crown and occiput and sides of head greenish-orange, instead of greenish olive-yellow. The grey nuchal band is considerably darker, the mantle is deep orange-brown, instead of green washed with olivaceous-orange. The greater wing-coverts are much more grey, and the inner secondaries have their centres grey instead of being uniform green. The whitish grey of the chin seems to extend further on to the throat, the rest of the throat is brownish-orange instead of orange-yellow. Breast of a deeper orange-brown, which colour extends almost to the centre of the abdomen. The edges of the under tail-coverts are whiter, being less washed with sulphur-yellow.

17. *Ptilinopus perlatus perlatus* (Temm.).

"West New Guinea, Jobi, Salwatty."
♂ ♀ Marai, Jobi, April 1897 (W. Doherty).
4 without locality (from Bruijn's hunters).

18. *Ptilinopus perlatus zonurus* Salvad.

Aru Islands, British New Guinea, and Fly River. Also Fergusson and Goodenough Islands.

- 1 ♂ Kobroor, Aru (H. Kühn).
- 2 Aru Islands (bought from Whitely).
- 4 Fergusson (Albert S. Meek), 1 ♂, 3 sex not ascertained.
- 1 ♀ Goodenough Islands, D'Entrecasteaux group (Meek).
- 1 ♂ Milne Bay (A. S. Meek).
- 1 Brown River (Emil Weiske), not sexed.
- 2 ♂ ♀ Mt. Gayata, Richardson Range (Weiske coll.).

19. *Ptilinopus perlatus plumbeicollis* A. B. Meyer.

Known only from Kaiser Wilhelm's Land.

- 1 ♀ Konstantinhafen, April 1894 (Kubary coll.).

20. *Ptilinopus rivolii rivolii* (Prév. & Knip.).

New Ireland, New Hanover, and Duke of York Island.

We have 7 specimens: 3 ♂, 1 ♀, New Hanover (Webster coll.); 2 ♂, 1 ♀, New Ireland.

21. *Ptilinopus rivolii prasinorrhous* Gray.

The distribution of this form is very wide and peculiar. It is found on the Key Islands, extends along the South-East Islands to the Moluccas, thence to the Western Papuan Islands, and from there to the islands in Geelvink Bay, as far south as Ron, according to a specimen bought by Doherty on Ron. We have 48 specimens:

- 2 ♂, 1 ♀ Add, north of Great Key (Kühn).
- 9 ♂, 2 ♀ Toal, Little Key (Webster and Kühn).
- 2 ♂ Teoor, South-East Islands (Kühn). "Iris dark brown, feet carmine, bill sulphur-yellow."
- 4 ♂, 1 ♀ Goram-laut (Kühn).
- 3 ♂, 4 ♀ Kisoei Island (Kühn).
- 5 ♂ Kilsoei, Koer group (Kühn).
- 2 ♂ Koer Island (Kühn).
- 3 ♂, 1 ♀ Kayeli, Buru (Doherty).
- 1 ♂ Mt. Mada, Buru (Dumas).
- 1 ♂ Weeda Islands, near Halmahera (Guillemard coll.). "Iris orange; bill chrome-yellow; feet dull coral red."
- 2 ♂, 1 ♀ Jobi Island (Bruiju).
- 3 ♂ Traitor's Island (Bruiju, per Guillemard).
- 1 ♂ Ron (bought by Doherty from natives).

We see no material differences in our large series, though it appears to Mr. Hartert that the *mutes* from the Geelvink Bay have the purple abdominal patch brighter in colour.

22. *Ptilinopus rivolii bellus* Sel.

Apparently the whole of New Guinea. We have 14 specimens with exact localities.

- 1 ♂ Hatam, Arfak (Beccari coll.).
- 6 ♂ ad., 1 ♂ juv., and 2 ♀ Arfak (Bruijn coll.).
- 1 ♀ Sattelberg (Erik Nyman coll.).
- 2 ♂ ♀ mountains between Laroki and Vanapa Rivers (Weiske coll.).
- 1 ♂ Aroa River, 4000 feet (Weiske coll.).

23. *Ptilinopus rivolii strophium* Gould.

Louisiade Islands to South-Eastern New Guinea.

At first sight *P. rivolii strophium* and *P. rivolii miqueli* appear very different from the other three subspecies of *rivolii*, because of the apparent absence of the purple abdominal patch; but we find old *males*, chiefly from Rossel and St. Aignan Islands, and from near Port Moresby, showing every gradation from a few purple spots to a patch even larger than in *P. rivolii rivolii*. We examined 16 specimens, as follows:—

- 1 typical ♂, said to be from near Port Moresby (Goldie coll.).
- 1 typical ♂ Egum Island (A. S. Meek coll.).
- 1 typical ♀ and 1 typical ♂ Sudest Island (A. S. Meek coll.).
- 3 typical ♂, 1 ♀, 1 ♂ with small, and 1 ♂ with a very large, purple patch, Rossel Island (A. S. Meek coll.).
- 2 typical ♂, 2 ♀, and 2 ♂ with small purple patches, St. Aignan (A. S. Meek coll.).

24. *Ptilinopus rivolii miqueli* Schleg.

Jobi and Miosnom Islands, in the Geelvink Bay.

We have the following specimens:—

- 1 ♂ Miosnom (Beccari coll.).
- 1 ♂ Miosnom (bought by Doherty).
- 1 ♂ no locality (Bruijn coll.).
- 1 ♂ Marai, Jobi (Doherty coll.).
- 1 ♂ Jobi (Bruijn coll.).

25. *Ptilinopus solomonensis solomonensis* Gray.

Breast-band entirely yellow; lilac of abdomen pale, of forehead dark; Solomon Islands.

We have at present one *male* (wrongly sexed "female") collected by Mr. C. M. Woodford on Ugi, 1. ix. 1896.

26. *Ptilinopus solomonensis johannis* Sel.

Breast-band entirely yellow, apparently wider than in the former; lilac of abdomen dark, of the same colour as the crown.

Admiralty Islands and New Hanover.

We have six skins, four *males* and two *females*, from New Hanover, collected by Captain Webster.

27. *Ptilinopus solomonensis speciosus* Schleg.

Upper part of breast-band yellow, lower white, forehead green, but lores purple; abdomen pale lilac-mauve.

Northern islands of Geelvink Bay, Mafor, Jobi, and Traitor's Island.

Besides four *males* and a young bird, without locality, we have before us the following 19 specimens:—

12 ♂ Mafor (Doherty coll.).

2 ♀ Mafor (Doherty coll.).

1 ♀ Marai, Jobi (Doherty coll.).

1 ♂, 1 ♀ Traitor's Island (Bruijn's hunters, per Guillemard).

1 ♂, 1 ♀ Korrido (Bruijn coll.).

ON THE "IONOTRERON" GROUP OF *PTILINOPUS*.

The next section of *Ptilinopus* we have to deal with has been termed by Count Salvadori, in Vol. XXI. of the *Cat. B. Brit. Mus.*, the *Ionotreron* group, but has been raised to generic rank in Dr. Sharpe's new *Hand-list*. It consists of the following forms:—

P. hyogaster (Temm.). Northern Moluccas.

P. granulifrons Hart. Obi Major.

P. nanus (Temm.). New Guinea and West Papuan Islands.

P. pectoralis (Wagl.). West New Guinea and adjoining islands.

P. salvadori Rothsch. Jobi.

P. viridis (L.). Southern Moluccas and South-East Islands.

P. musschenbrocki Schl. Islands in Geelvink Bay, and perhaps parts of Western New Guinea.

P. lewisi Rams. Solomon Islands (Guadalcanar ? Shortlands).

P. vicina Hart. D'Entrecasteaux group.

P. eugeniae (Gould). Solomon Islands (Ugi).

Before giving our enumeration of specimens, we think it necessary to explain our great apparent inconsistency in treating all the forms of the *Ionotreron* group binomially, while we have named forms seemingly much more distinct trinomially. The reason for this is that, although Count Salvadori has assigned very succinctly separated localities to each of these forms, we have more than a suspicion that at least two forms occur together on Jobi, and perhaps elsewhere also. If this is the case, some of the forms in question would have to be treated as good species. However, our knowledge is still too imperfect to warrant a definite statement as to which forms are good species, and which subspecies. Therefore we are forced to defer our final judgment about the affinities of these forms for the present.

28. *Ptilinopus nanus* (Temm.).

We have six specimens of this very distinct species from Mt. Gayata, the Aroa River, and the highlands between the rivers Laroki and Vanapa, all collected by Weiske. Three are *males* and three *females*.

29. *Ptilinopus pectoralis* Wagl.

We have 20 specimens :

8 ♂ with no locality.

1 ♂ Kapaur (Doherty coll.). "Iris orange-scarlet with an internal ring of yellow ; feet carmine ; bill orange with yellow tip."

2 ♂, 1 ♀ Mansinam (Bruijn coll.).

1 ♀ Dorey (Bruijn coll.).

1 ♀ Waigin (Powell coll.).

4 ♂, 2 ♀ Mysol (Kühn coll.).

30. *Ptilinopus salvadorii* Rothsch.

We have still only the three specimens mentioned in the *Cat. B. Brit. Mus.* XXI. p. 151 :

2 ♂ "Surui, Jobi Island (Bruijn coll.), January 1st, 1883."

One specimen without label, but of exactly the same preparation as the other two.

31. *Ptilinopus viridis* (L.).

We have at present 18 skins :

5 ♂ Buru (Doherty coll.).

4 ♂ Maar Island, Ceram-laut group (Kühn coll.).

7 ♂, 2 ♀ Manawoka, Goram group (Kühn coll.).

32. *Ptilinopus musschenbroeki* Schl.

We have 17 specimens :

8 ♂, 5 ♀ Mafor (W. Doherty coll.).

♂ ♀ without locality (Bruijn coll.).

2 ♂, Marai, Jobi Island (Doherty coll.).

On the label: "April 1897 ; ♂ ; iris outwardly orange-red, inwardly yellow ; feet bright red ; claws greyish-brown ; bill olive-yellow ; base of upper mandible rich ochre."

The last two specimens point to the occurrence on Jobi of *P. salvadorii* as well as *P. musschenbroeki*, for, while there may be some slight doubt as to Bruijn's localities, there can be no doubt that Doherty's specimens are really from Jobi.

33. *Ptilinopus lewisi* Rams.

We have one ♂ and one ♀ from Guadalcanar (Woodford coll.), which are quite typical. We also have a ♂ (marked ♀) from Fanro, Shortland Islands, which differs from the Guadalcanar ♂ in having the chin green instead of grey.

34. *Ptilinopus vicinus* Hart.

We have four *males*, including the type from Fergusson (Meek coll.). Also three younger birds marked "♀," but evidently immature *males*. Two *males*, Goodenough Island (Meek coll.).

This is of course only a subspecies of *lewisi* ; but we do not yet understand the affinities of the rest, and as we have provisionally employed binomials for the rest of these forms we have done so also in this case. (Cf. *Nov. Zool.* 1895, p. 62 ; 1896, p. 249.)

35. *Ptilinopus eugeniae* (Gould).

We have two *males* from Ugi, collected by Mr. C. M. Woodford.

The white head makes this form appear at first sight very distinct from *P. lewisi*, but it is possible that this also in the end will prove to be only a subspecies of the latter.

The two forms standing at the head of our enumeration (*hyogaster* and *granulifrons*) are most curious; but as they inhabit areas quite outside the regions we are dealing with in this article, we will not discuss them here.

THE GENUS MEGALOPREPIA.

This genus, according to our view, contains only two species: *Megaloprepia formosa* G. R. Gray, from the Northern Moluccas to Obi, and *M. magnifica* (Temm.), which consists of five subspecies, and extends from the Western Papuan Islands to Australia. We have here only to deal with the second species.

36. *Megaloprepia magnifica magnifica* (Temm.).

Eastern Australia from Rockingham Bay, south to New South Wales. We have 5 specimens:

One without locality, one marked Queensland, one marked ♂ "South Australia" (*vide* Whitely), 1 ♂ 1 ♀ Richmond River, South Queensland, 1874 (Cockerell coll.), per Baron A. von Hügel.

37. *Megaloprepia magnifica assimilis* (J. Gould).

Similar to the former, but smaller. The *females* are smaller than the *males*, as in the former.

North of Rockingham Bay to Cape York.

We have the following 7 specimens:—

1 ♂, 2 ♀ Cedar Bay (A. S. Meek coll.).

1 ♂, 1 ♀ Breeza, North Queensland (Olive coll., per H. C. Robinson).

1 ♂ Bellenden Ker Range, North Queensland (Olive coll., per H. C. Robinson).

1 ♂ Mt. Saphiri, Cairns, North Queensland (Olive coll., per H. C. Robinson).

38. *Megaloprepia magnifica puella* (Less.).

Much smaller, the purple of the underside much more reddish, the yellow band on the wing more dissolved into spots.

Western Papuan Islands and Berau Peninsula south to Etna Bay.

We have at present 18 specimens:—

3 Etna Bay (Captain Cayley Webster coll.).

1 Triton Bay (Captain Cayley Webster coll.).

1 ♀ Mysol (Powell coll.).

1 Mysol (Powell coll.).

1 ♂, 1 ♀ Mysol (Heinr. Kühn coll.).

1 ♂, 1 ♀ Batanta (Powell coll.).

1 ♂ Waigin (Gnillemard coll.).

1 ♀ Waigin (Powell coll.).

2 ♂, 1 ♀ Kapaur (W. Doherty coll.).

1 ♀ pull., Kapaur (W. Doherty coll.).

1 ♂, 1 ♀, Dorey (W. Doherty coll.).

39. *Megaloprepia magnifica septentrionalis* A. B. Meyer.

Differs only from *puella* in having the undersurface of the tail less blackish and more brownish-grey.

Jobi Island and north coast of New Guinea from Takar to Kafu and Humboldt Bay.

We have the following 18 specimens:—

- 3 Jobi (Bruijn coll.).
- 2 ♂, 4 ♀ Marai, Jobi (W. Doherty coll.).
- 1 ♀ Serui, Jobi, (Bruijn's hunters coll.).
- 3 ♂, 3 ♀, 1 sex doubtful, Takar (W. Doherty coll.).
- 1 ♀ Tana Mera (W. Doherty coll.).

40. *Megaloprepia magnifica poliura* Salvad.

Differs from *septentrionalis* in having the undersurface of the tail still paler and more greyish. Replaces the former in Eastern New Guinea, extending from the Huon Gulf, round by Collingwood and Milne Bays to British New Guinea.

We have the following 14 specimens:—

- 1 ♂ Konstantinhafen (Kubary coll.).
- 1 ♂, 2 ♀ Sattelberg (Erik Nyman coll.).
- 2 Simbang (Cotton & Webster coll.).
- 1 ♂ Collingwood Bay (A. S. Meek, coll.).
- 1 ♂ Chado Bay (A. S. Meek coll.).
- 1 ♂, 2 ♀ Milne Bay (A. S. Meek coll.).
- 1 Brown River (E. Weiske coll.).
- 1 British New Guinea (Goldie coll.).
- 1 Dora, British New Guinea (Lix coll.).

Dr. A. B. Meyer includes under his *septentrionalis* specimens from Konstantinhafen. Our specimen from that place, with Kubary's original label, however, is identical with the most typical *poliura*, both from Huon Gulf and British New Guinea.

THE GENUS CARPOPHAGA.

41. *Carpophaga myristicivora* (Scop.).

We are sorry to say that we are unable to acknowledge the genus *Globicera*. If *Globicera* were upheld we should also have to make separate genera for *Ptilinopus insolitus* Schleg. and *Ptilinopus granulifrons* Hart., which to our mind would be absurd; for, with the exception of the frontal excrescences, these two species are almost identical with *Ptilinopus iozonus* and *Ptilinopus hyogaster* respectively!

We have at present 14 specimens of *Carpophaga myristicivora*:—

- 4 Mysol (H. Kühn coll.).
- 1 Batanta (Powell coll.).
- 1 Sorong (Bruijn coll.).
- 1 Halmahera (Bruijn coll.).
- 7 Weeda Islands, near Halmahera (Guillemard coll.).

Count Salvadori doubts Bruijn's locality "Halmahera," and therefore does not include the Northern Moluccas in the localities quoted in the *Catalogue of Birds*; but, as our seven specimens from the Weeda Islands undoubtedly came from there, there is no great reason to doubt Bruijn's accuracy in this case.

42. *Carpophaga rubricera* Gray.

This species inhabits the Bismarck Archipelago. We have the following specimens :—

- 4 New Ireland (collector unknown).
- 1 New Britain (Th. Kleinschmidt coll.).
- 2 Duke of York Islands (Brown & Hübner coll.).
- 3 New Hanover (Captain Cayley Webster coll.).

43. *Carpophaga concinna* Wall.

This widely-spread species only just touches the Papuan region on the Arn Islands, where it seems to be rare, as we received only one single specimen from Pulu Babi (= Pig Island), Aru Islands, collected by Heinrich Kühn. It extends from the Northern Islands of the Celebes group (including the Talaut and Sangir Islands) to the Tenimber Islands, Babber, Dammer, Tifore, the South-East Islands, to Banda and the Aru group.

44. *Carpophaga geelvinkiana* Schleg.

This form is evidently restricted to the Northern Islands in the Geelvink Bay. We have 11 skins : 7 from Mafor (W. Doherty coll.), 1 from Biak and 1 from Korrido, Schouten Islands (from Doherty), 1 from Miosnom (also Doherty), and 1 without locality.

45. *Carpophaga van-wycki* Cass.

Bismarck Archipelago, Eastern Papuan Islands, and Kaiser Wilhelm's Land.

We have the following seven specimens :—

- 1 Duke of York Islands.
- 2 New Ireland.
- 1 St. Aignan (A. S. Meek coll.).
- 2 Egum group (A. S. Meek coll.).
- 1 ♂ Konstantinhafen, December 1893 (J. Kubary coll.).

This last specimen appears to have paler chestnut under tail-coverts, and the green of the back seems to run farther up the back ; but we cannot separate this form on the evidence of one inferior skin.

46. *Carpophaga zoeae* (Less.)

With a series of twenty-four in the Tring Museum, and after having examined a dozen in the British Museum, we are unable to separate Dr. A. B. Meyer's *C. zoeae orientalis*, or any other subspecies. Although some specimens have the chin and throat of a purer white than others, this character is not confined to specimens from German New Guinea, and there also occur individuals with less white throats. The metallic green gloss to the feathers of the pectoral band is apparent in all freshly moulted individuals, and the green metallic band on the back is developed more or less in all specimens. There is no local difference in the shape of the grey breast. Our series consists of the following specimens :—

- 1 from Beccari's expedition, locality doubtful.

1 ♂ Kapaur (W. Doherty coll.). " Iris whitish, feet carmine, claws brown, bill blackish."

1 ♀ Marai, Jobi (W. Doherty coll.).

4 ♀ Ron Island, Southern Geelvink Bay (W. Doherty coll.). The iris of one is marked as "white"; in two others as "blue-black, with an obscure inner grey line, and a broad outer white line."

2 ♂ Takar (W. Doherty coll.).

1 ♂, 2 ♀ Konstantinhafen (J. Kubary coll.).

1, not sexed, Simbang (Webster & Cotton coll.).

1 ♂, 1 ♀ Sattelberg (Erik Nyman coll.).

1, not sexed, British New Guinea (Goldie coll.).

1 ♂ Sogere, 2000 ft. (H. O. Forbes coll.).

1 Brown River (E. Weiske coll.).

2 ♂ Fergusson (A. S. Meek coll.).

1 Basilisk Island, British New Guinea (A. S. Meek coll.).

1 ♂ Wammer, Aru (R. Powell coll.).

1 Dobbo (C. Webster coll.).

1 ♀ Kobroor, Aru (H. Kühn coll.).

1 ♂ Trangan, Aru (H. Kühn coll.).

47. *Carpophaga chalconota* Salvad.

We have only six skins of this somewhat rare species. Four of these have no exact localities, but are evidently from Dutch New Guinea, probably from the Arfak Mountains. The others are collected on Mt. Cameron, in the Owen Stanley Range, at an elevation of about 6500 ft. The iris is marked as red, feet pink, bill black.

The latter two specimens are considerably larger than the other four. It is therefore probable that a larger race can be separated, if more material is available for comparison.

48. *Carpophaga rufigaster* (Quoy et Gaim.).

(Generally called *rufiventris*, but originally named as above!)

We have 23 specimens, and we are unable to separate any races. We have only one example from Jobi, but that does not differ in the colour of the neck and head (cf. *Cat. B. Brit. Mus.* XXI. p. 213).

1 Salwatty (Beccari coll.).

1 Batanta (Powell coll.).

3 Waigin (Guillemard & Bruijn coll.).

5 Mysol (Kühn & Guillemard coll.).

1 Serni, Jobi (W. Doherty coll.).

1 Geelvink Bay (?).

1 Andai (Powell coll.).

1 Kapanur (W. Doherty coll.).

1 Etna Bay (Cayley Webster coll.).

1 Stephansort (Erik Nyman coll.).

1 Konstantinhafen (Kubary coll.).

2 Fly River (D'Alberti's coll.).

2 Milne Bay (A. S. Meek coll.).

2 Brown River (E. Weiske coll.).

THE FORMS OF *Carpophaga pinon*.

In the *Catalogue of Birds*, vol. XXI. pp. 221-4, the "subgenus *Zonoenas*" contains the following Papuan forms: *Carpophaga muelleri*, *pinon*, *westermanni*, *astrolabiensis*, *rubiensis*, *salvadorii*, and *melanochroa*, all treated as species. *C. muelleri* and *C. melanochroa* stand by themselves. The principal differences between the various other forms are the presence, absence, or indication of light-coloured borders to the wing-coverts. We find, however, a perfect bridge from the entirely unbordered coverts in *pinon*, through the faintly-bordered *rubiensis* to *westermanni* and *astrolabiensis*; and all the other differences are of the slightest nature, being merely various shades of colour. We can, therefore, only recognise as species *C. pinon*, *C. muelleri* and *C. melanochroa*, while we regard *C. astrolabiensis*, *rubiensis*, and *westermanni* as subspecies of *pinon*, the latter name having been created first.

49. *Carpophaga pinon pinon* (Quoy et Gaim.).

This form is principally an inhabitant of the Southern and Western Papuan Islands—Arn, Rawak, Batanta, Salwatty, and Mysol. It also enters Papua itself, being found in the Berau Peninsula and on the coasts of British New Guinea.

We have :—

- 1 ♂, 1 ♀ Wammer, Arn group (Powell coll.).
- 1 ♀ Trangan, Arn group (H. Kühn coll.).
- 1 ♀ Wanambai, Arn group (H. Kühn coll.) "Iris dark blood-red, eyelids blood-red, feet carmine, bill slaty grey with whitish tip."
- 3 Dobbo, Arn (C. Webster coll.).
- 1 Dobbo, Arn (Guillemard coll.).
- 2 ♂, 2 ♀ Mysol (H. Kühn coll.).

The wing-coverts in these specimens are more or less distinctly edged with pale grey, so that they are hardly distinguishable from some *rubiensis*.

- 1 ♂, 1 ♀ Mysol (Powell coll.).
- 1 ♂, 1 ♀ Waigin (Powell coll.).
- 1 ♀ Batanta (Guillemard coll.).
- 1 ♂ Sorong, from Bruijn's hunters.
- 1, not sexed, mainland of New Guinea, east of Yule Island (Goldie coll.).
- 1 ♂ Nicra (Lix coll.).

50. *Carpophaga pinon rubiensis* Meyer.

We take it that this form is distributed from Ron and the southern shore of Geelvink Bay (Rubi) to the hills of British New Guinea. We have the following specimens :—

- 2 ♂, 3 ♀ Ron Island (W. Doherty coll.).
- 1, without indication of sex, Brown River (Weiske coll.).
- 1 " " " " Moroka District, Owen Stanley Mountains.

These birds are perfectly similar to each other, and differ from *C. pinon pinon* in the very conspicuous light grey edges to the upper and under wing-coverts and slightly larger size. The wing is 1 to 2 cm. longer.

51. *Carpophaga pinon salvadorii* Tristr.

Differs from *C. pinon pinon* in having the crown of the head not French grey, but strongly washed with a rosy vinous tinge. This rosy tinge is also strongly developed on the mantle, which is lighter and not so greyish. The chestnut colour of the breast terminates more abruptly towards the chest.

This form extends from the Louisiade Islands to the D'Entrecasteaux group. We have :—

1 from Goodenough Island. "Iris bright red with a dark yellow inner ring ; feet crimson ; bill darker grey with light tip" (A. S. Meek coll.).

4 from Fergussan Island (A. S. Meek coll.).

3 from St. Aiguan (A. S. Meek coll.).

5 from Rossel (A. S. Meek coll.).

52. *Carpophaga pinon westermanni* Schleg.

Wing-coverts slaty black with whitish-grey edges. Jobi Island.

We have received 2 from Ansus and 3 from Marai, Jobi Island, from William Doherty ; and have also one from Ansus, from Bruijn's hunters.

53. *Carpophaga pinon astrolabiensis* Meyer.

Perfectly similar to *C. pinon westermanni*, but the mantle is slightly more vinous, and the whitish-grey borders to the upper wing-coverts extend almost equally wide over all the series of wing-coverts, except the longest. Some specimens are hardly distinguishable from *westermanni*. North coast of New Guinea from Takar to Huon Gulf. We have :—

3 Takar (Doherty coll.). "Iris crimson, with a more scarlet inner line, eyelids dark red ; feet carmine, claws bluish ; bill dull slaty."

3 Konstantinhafen (J. Kubary coll.).

1 Sattelberg (Erik Nyman coll.).

54. *Carpophaga mülleri mülleri* (Temm.).

Aru Islands and Southern New Guinea.

We have before us the following seven specimens :—

4 Trangan, Aru Islands (H. Kühn coll.). "Iris greyish-brown ; feet pale bluish or violet ; bill slaty-black."

1 Naiabui (D'Albertis and Tomasinelli coll.).

2 Brown River (E. Weiske coll.).

55. *Carpophaga mülleri aurantia* Meyer.

This form from Kaiser Wilhelm's Land differs from *C. mülleri mülleri* in the lighter, brighter, and more reddish tinge of fore and hindneck. Dr. A. B. Meyer has (*Abh. Ber. Dresden Museum* 1892-3) already observed that some specimens from the "Geelvinkbay" belonged to his *aurantia*, though they differed slightly in some tinge of colour. We have four wretched skins bought by Doherty on the Waropen coast, which also agree with *aurantia*, though the neck seems to be slightly darker.

More material is required to find out whether there is another Geelvink Bay subspecies or not.

We have two typical *C. m. aurantia* from Konstantinhafen, collected by the late Mr. J. Kubary.

THE GENUS MYRISTICIVORA.

Here again our readers may be surprised that we have treated such apparently very closely allied forms as species, with binomial nomenclature, but we think the following facts will explain our reasons for doing so.

First of all, we find in some localities at least two species occurring together : for instance, we have before us specimens of *Myristicivora bicolor* and *melanura* from Halmahera, specimens of *M. bicolor* and *M. spilorrhoea* from Aru, and *M. luctuosa* and *bicolor* from Menado, Celebes. Then, however big a series has been examined, intermediate specimens between the various forms have hitherto not been found. Our knowledge of the habits and nesting areas is very meagre, being almost confined to the two species at the extreme ends of the area of distribution of the genus—namely, to *M. bicolor* and *M. spilorrhoea*.

Our series of just one hundred specimens is as follows :—

56. *Myristicivora bicolor* (Scop.).

- 3 ♂ Car Nicobar (A. L. Butler coll.).
- 1 ♂, 1 (?) Camorta, Nicobars (Wimberley coll.).
- 1 ♀ Si Oban, west of Sumatra (Modigliani coll.).
- 2 ♀ Lago (Raap coll.).
- 1 Pulu-laut, north of Borneo (C. Hose coll.).
- 1 ♂ Pulu Panjang (C. Hose coll.).
- 2 ♂, 1 ♀ Pulu Tega, north of Borneo (J. Whitehead coll.).
- 1 ♀ Marinduque, Philippines (Steere coll.).
- 1 ♂ Gnimaras, Philippines (Steere coll.).
- 1 ♂ Sulu Islands (Dr. Platen coll.).
- 3 Menado, Celebes (Cursham coll.).
- 1 Kabruang, 2 Tagulandang, 2 Pulu Api (Cursham coll.).
- 1 Mantehage, 1 Siao, 1 Great Sangir (Cursham coll.).
- 3 Lirung, Talaut (from Waterstradt's natives).
- 1 ♂ Djampea Island (Everett coll.).
- 1 ♂ juv. Batjan (Platen coll.).
- 1 ♂ Batjan (W. Doherty coll.).
- 1 ♂ Weeda Islands, near Halmahera (Guillemard coll.).
- 2 ♂, 1 ♀ Ceram-laut (H. Kühn coll.).
- 1 ♂, 1 ♀ Kisoei, Watoebela (H. Kühn coll.).
- 3 ♂, 2 ♀ Teoor (H. Kühn coll.).
- 1 ♂, 1 ♀ Toeal, Little Key (H. Kühn coll.).
- 1 Toeal, Little Key (C. Webster coll.).
- 1 Dobbo, Aru (C. Webster coll.).

This bird is also recorded from the coasts of the Malay Peninsula, Cochin China, Billiton, Java, and the Tenimber Islands.



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57. *Myristicivora spilorrhoea* (G. R. Gray).

- 1 ♂ Cedar Bay, Queensland (A. S. Meek coll.).
- 1 ♂, 1 ♀ Barnard Islands, Queensland.
- 1 Queensland.
- 1 ♂ Mount Islet, Torres Strait.
- 2 ♀ Woodlark Island (A. S. Meek coll.).
- 1 ♀ Sudest Island (A. S. Meek coll.).
- 1 ♂, 1 ♀ St. Aignan (A. S. Meek coll.).
- 1 ♂ Rossel (A. S. Meek coll.).
- 2 ♀ Nicuira, British New Guinea (D'Albertis and Lix coll.).
- 1 ♂ Konstantinhafen (J. Kubary coll.).
- 1 ♂, Takar, 1 ♀, Yamna, 1 ♂, Anus (W. Doherty coll.).
- 2 ♀ Trangan, Aru Group (H. Kühn coll.).
- 1 ♂ Soengi, Aru Group (H. Kühn coll.).

58. *Myristicivora subflavescens* (Finsch).

- 3 New Ireland (collector unknown).
- 2 New Hanover (Cayley Webster coll.).

59. *Myristicivora melanura* (G. R. Gray).

- 1 ♂ Halmahera (Powell coll.).
- 1 ♀ Bara, Buru (Dumas coll.).
- 2 ♂, 1 ♀ Cayeli, Buru (W. Doherty coll.).
- 1 ♂ Cayeli, Buru (Bruijn coll.).
- 2 ♀ Goram-lant (H. Kühn coll.).
- 1 juv., without locality.

This species is only known from the Moluccan Islands proper, and Goram-lant, while on the other South-East Islands Kühn found only *M. bicolor*.

60. *Myristicivora luctuosa* (Temm.).

- 2 Bangka, Celebes (Cursham coll.).
- 3 Menado, Celebes (Cursham coll.).
- 1 ♂ Tawaya, Celebes (W. Doherty coll.).
- 1 ♀ Dongala, Celebes (W. Doherty coll.).
- 1 ♀ Kema, North Celebes (Powell coll.).
- 2 Lambeh (Cursham coll.).
- 1 Peling (Cursham coll.).
- 3 Banggai (Cursham coll.).
- 1 ♂, 1 ♀ Sula Mangoli (W. Doherty coll.).

This species is evidently confined to the Celebes and Sula Groups, though not on record from Djampea.

61. *Columba albertisii* (Salvad.).

We fully agree that this pigeon had better not be placed in a separate genus, as has hitherto universally been done. See Nov. Zool. VII. p. 241.

Plate IV. shows the allied *Columba mada* Hart., from Buru, which differs

from *C. albertsii* as follows: the large bare space round the eyes, which doubtless was the reason for the creation of the genus *Gymnophaps*, is replaced by a very small bare patch; the throat and sides of head are whitish instead of deep purplish-chestnut, the abdomen is much lighter—rather buffy than chestnut; the upperside, and especially the head and neck, are very much lighter; the tail wants the wide grey tip.

We have of *C. albertsii* the following specimens:—

- 1 Serui, Jobi (Doherty coll.).
- 3 Arfak (from Bruijn's hunters).
- 3 Konstantinhafen (J. Kubary coll.).
- ♂ ♀ Sattelberg (Erik Nyman coll.).
- 2 Moroka district, British New Guinea (H. O. Forbes coll.).
- 3 Goodenough Island (A. S. Meek coll.).

62. *Columba albigularis* (Bp.).

This pigeon belongs doubtless to the same species as *C. metallica*, *griseigularis*, *leopoldi*, and several others. They are all the same bird in differently attired forms, representing each other on the various islands which they inhabit. The white throat of *C. albigularis* is replaced by a pale grey one in *C. griseigularis*, and by a dark slaty-grey one in *C. leopoldi*, which may be described as a somewhat smaller *albigularis* with rufous abdomen. Probably *C. castaneiceps*, *vitiensis*, *hyponochroa*, *nitens*, *janthina*, and perhaps still more, belong to this same group; the oldest specific name would then probably be *metallica*. For a full discussion we have not at present sufficient material. Of *albigularis* we have the following 19 skins:—

- 4 adults, 1 pull. Soa Island, Little Key group (H. Kühn coll.).
- ♂ ad. Maar, Ceram-lant (H. Kühn coll.).
- ♂ Mysol (H. Kühn coll.).
- ♂ Mansinam (from Bruijn's hunters).
- 2 pull., Dutch New Guinea (from feather-dealers).
- ♀ Konstantinhafen (Kubary coll.).
- ♀ Milne Bay, S.E. New Guinea (A. S. Meek coll.). "Iris light yellowish-red; feet purple-red; bill purple-red with lavender-grey tip."
- 2 ♂ Mt. Cameron, Owen Stanley range (A. S. Anthony coll.).
- ♀ St. Aignan, Louisiade group (A. S. Meek coll.).
- 2 Tagulandang, collected by Cursham's natives. (Cf. Meyer and Wiglesw. *Birds of Celebes*, II. p. 634.)
- 1 Gunong Api, collected by Cursham's natives. (*Ibid.*)
- ♀ Sula Mangoli, W. Doherty. (Cf. Nov. Zool. V. p. 136, where Mr. Hartert has discussed this specimen at length.)

A series from Sula Mangoli would be most desirable for comparison with specimens from other countries.

THE GENUS MACROPYGIA.

Being much interested in this genus, we have ventured to review it entirely, as far as we are acquainted with its members. Also here, like everywhere, we find a number of well-defined groups which we consider to deserve full specific rank, while a great many others are merely representative forms of each other.

Following the arrangement of the *Catalogue of Birds*, we have first a species with barred upperside and middle rectrices, grey outer tail feathers, with a black subterminal bar and narrowly barred metallic chest, of which we know three geographical forms. This species must be called *M. unchall*.

63. *Macropygia unchall unchall* (Wagl.).

Wagler's description is a most excellent one, and we believe that it must have been only the utterly barbaric word that led our friend Count Salvadori to cast aside the name *unchall*. Of the three *Macropygiac* occurring on Java, none can be meant but what is generally called *leptogrammica*. That it is not *emiliana* is admitted by Count Salvadori (*Cat. B. XXI. p. 347*).

This form inhabits the hills of Java, Lombok, Sumatra and the Malay Peninsula. We have the following specimens before us:—

2 ♀ ad., 2 juv. Mt. Gedeh, Java (Ernst Prillwitz coll.).

2 ♂ ♀ Mt. Gedeh (Raap coll.).

1 ♀ Tosari, East Java (John Whitehead coll.).

3 ♂ Lombok (Doherty coll.).

64. *Macropygia unchall minor* Swinh.

Smaller, the bars on the middle rectrices generally less distinct. Inhabits Hainan.

We have only two females, both from R. Swinhoe's collection, evidently co-types.

The name of this form must be *minor*, as it is characterised (*Ibis*, 1870, p. 355), and the exact locality given.

65. *Macropygia unchall tusalia* (Hodys.).

The largest form, upperside very dark chestnut, the metallic gloss on the neck very glossy.

Northern India to Western China. We have before us:—

1 ♂, 1 ♀ Sikkim (H. J. Elwes coll.).

1 ♀ Sikkim (from Möller's hunters).

1 ♂, 2 ♀ N. Cachar (E. C. Stuart Baker coll.).

1 ♂ Salween Hills (Bingham coll.).

The second species is *M. magna*. It has a totally unbarred somewhat pale tail and, when adult, a somewhat powdered hindneck, and must also be divided into three subspecies.

66. *Macropygia magna magna* Wall.

Known from the Timor group only, whence we have 3 ♂, 2 ♀, collected by A. Everett on Alor.

67. *Macropygia magna timorlaoensis* Meyer.

Known from Timorlaut only. We have no specimens, but have examined those in the British Museum.

Although belonging to a distinct subspecies, this form evidently belongs to the *magna* group.

68. *Macropygia magna macassariensis* Wall.

South Celebes and islands to the south of it. The head is differently coloured than in *M. magna magna* and *timorlaoensis*.

We have four from Djampea and one from Saleyer.

The next group which we unite into one species consists of large plain red-brown birds with a strong metallic sheen on the hindneck, a slight metallic gloss on the chest, which is with or without indications (but never more in the adult bird) of cross-bars. The wing coverts have lighter, more or less punctulated edges, the tail is rufous, the outer rectrices each with a wide blackish band. The oldest available name for any member of this group is Temminck's *Columba phasianella*, and the species must therefore be called *Macropygia phasianella*. It consists, as far as we are aware, of the following forms :—

69. *Macropygia phasianella phasianella* Gould.

South Australia, Victoria, New South Wales, and at least to Southern Queensland. Large, hindneck with greenish, seldom reddish, metallic gloss, general colour paler and duller than in the non-Australian forms, but otherwise very much alike. We have five specimens, probably from New South Wales, and one from Richmond River, South Queensland, Cockerell coll.

70. *Macropygia phasianella* subsp. (?)

Examples from Northern Queensland seem to be remarkably smaller, as already mentioned by Mr. Robinson, *Ibis*, 1900, p. 647. As, however, our series is very poor, especially in old birds, so that we find it difficult to fix a specimen which deserves that honour as the type, we refrain for the moment from creating a name for the northern small form, although we are convinced that it is separable. We believe that our following specimens belong to this form :—

- 2 Cooktown (Olive coll.).
- 2 Bellenden Ker Range (Olive coll.).
- 1 "Russell" (Day coll.).

71. *Macropygia phasianella emiliana* Bp.

Hills of Java, North Borneo, Bali, Lombok (? Sumbawa), Flores. Deeper and brighter rufous, smaller. The Kina Balu examples are a shade lighter on the abdomen, but one is hardly separable from Lombok specimens. We have the following skins :—

- 3 Kina Balu (John Whitehead coll.).
- 2 ♂ ad. Bali (W. Doherty coll.).
- ♂ ♀, Lombok (W. Doherty coll.).
- 3 ♀ and juv. Lombok (Alfred Everett coll.).
- 1 ♂ ad., 1 juv., S. Flores (A. Everett coll.).
- 2 from Si Oban (west of Sumatra), seem to belong to this form also.

72. *Macropygia phasianella modigliani* Salvad.

Generally slightly larger; wing about 15 to 20 mm. longer than *emiliana*. In every other respect perfectly similar to *emiliana*.

Only known from Nias, whence we have one very fine adult *male* (erroneously marked " ♀ "), collected by Raap.

Two from Si Oban, marked *M. modigliani* by Count Salvadori, are as small as typical *emiliana*. (Cf. *Orn. Monatsber.* 1898, p. 93.)

73. *Macropygia phasianella cinnamomea* Salvad.

Engano, west of Sumatra.

We have no specimens of this interesting form, but we have no doubt that it belongs to the *phasianella* group.

74. *Macropygia phasianella tenuirostris* Bp.

Very similar to *emiliana*, but distinguishable by the deeper chestnut colour of the tail and lower rump.

Philippines to Palawan.

We have the following skins :—

3 ♂, 1 ♀ North Luzon (J. Whitehead coll.).

1 ♂ Mindoro (J. Whitehead coll.).

1 ♂ Leite (J. Whitehead coll.).

1 ♂ Negros (J. Whitehead coll.).

1 ♀ Davao, Mindanao (Dr. C. Platen coll.).

1 juv. Ayala, Mindanao (Steere coll.).

2 ♂ ad. Taguso, Palawan (John Whitehead coll.).

2 juv. Puerto Princesa, Palawan (Dr. Platen coll.).

1 ♂ ad. Bongao (Alfred Everett coll.).

There are some variations in the size and in the amount of amethyst sheen on the chest, but our material does not seem to show that these differences can be localised.

75. *Macropygia rufipennis* Blyth.

Inhabits the Andaman and Nicobar Islands. The always freckled hindneck and mantle and the great extent of cinnamon on the quills separate this species from all its nearer allies.

We have 2 specimens :—

1 ♂ ad. Mt. Harriet, Andamans (W. Davison coll.).

1 ♂ ad. Bajajagda, S. Andaman (A. L. Butler coll.).

We come now to a species which consists of a good many forms which are all closely allied or connected. They are all, for the genus *Macropygia*, of medium size ; on the upperside, with the exception of the head and neck, nearly uniform dark chestnut or rufous-chestnut of a darker or lighter rusty-rufous on the under tail-coverts ; below of a light buffish or vinous colour, and more or less barred on the breast. These bars are less conspicuous, and even absent in some of the eastern as well as in some of the western representatives.

The hindneck is always metallic, the forehead light, pale, sometimes whitish. The first of these that received a scientific name is the *Columba amboinensis* of Linnaeus, and our species must therefore be called *Macropygia amboinensis*.

We are acquainted with the following forms :—

76. *Macropygia amboinensis amboinensis* (L.).

Strongly barred below, but the barring becomes obsolete and evanescent on the abdomen. Under tail-coverts quite unbarred, or with mere indications of bars. Top of head cinnamon, not grey. Tips of the breast feathers whitish in adult *males*.

Amboina, Ceram, Buru, and South-East Islands.

The following specimens are at present in the Tring Museum:—

2 ♂, 1 ♀ Buru (Dumas coll.).

3 ♂, 2 ♀ 1 pull. Buru (W. Doherty coll.).

4 ♂, 1 ♀, 1 juv. Ceram-laut (H. Kühn coll. ♂). "Iris orange-red, feet carmine, bill black."

7 ♂ Ondor, Goram-laut (H. Kühn coll.).

1 ♀ Manawoka, Goram-group (H. Kühn coll.).

77. *Macropygia amboinensis keyensis* Salvad.

Very similar to typical *amboinensis*, but differing in the colour of the crown, which is greyish-vinous, palest on the forehead, in the barring of the underside being continued all over the abdomen, and even the under tail-coverts never being quite without bars (generally well barred), the somewhat wider blackish bars on the undersurface and the shorter tail.

Known from the Key Islands only. Mr. Kühn sent us 2 ♂, 1 ♀ from Toetal, Little Key, 4 ♂ ad. and 1 ♂ juv. from Add Island, north of Great Key.

78. *Macropygia amboinensis doreya* Bp.

Differs from the former principally in the colour of the foreneck and chest which is distinctly vinous, and of the crown which is vinous-greyish, with a pale rusty forehead. The chin also is not so reddish, but more whitish. The abdomen is not or very little barred, the under tail-coverts unbarred.

Distribution: Dutch New Guinea, Western Papuan Islands, Jobi and Schouten Islands, and Aru group.

We have before us the following specimens:—

3 ♂, 1 ♀ Dorey (W. Doherty coll.).

2 ♂ Hatam, Arfak (from Bruijn's hunters).

4 ♂, 3 ♀ Kapaur (W. Doherty coll.).

2 juv. Korrido (from Bruijn's hunters).

♂ ♀ Biak (Doherty coll.). "Iris dull crimson with an inner bluish ring; feet dusky reddish; bill fuscous."

1 ♂ ad. Ansns, Jobi (from Bruijn's hunters).

1 ♀ juv. Salwatty (collector unknown).

2 ♂, 2 ♀ Dobbo and Wannambai, Aru (Captain Webster coll.).

1 ♂ Wannambai, Aru (H. Kühn coll.).

2 ♂ without labels.

In spite of our former doubts with regard to the Aru birds (see Nov. Zool. III. p. 536), we cannot confidently separate them from true *doreya*, nor can we discover differences to distinguish those from Jobi and Schouten Islands. This is most peculiar, as Mafor has another very distinct form.

79. *Macropygia amboinensis kerstingi* Rehw.

We have no specimens of this form from Kaiser Wilhelm's Land, but Professor Reichenow's careful description leaves no doubt to us that it is a form of the *amboinensis* group, and we think it will prove to be nearest to *doreya*. No series is available, and the specimen described by Reichenow may not be fully adult.

80. *Macropygia amboinensis maforensis* Salvad.

The breast much more whitish than in *doreya*, abdomen and under tail-coverts much lighter, hind-neck and crown cinereous, the neck with wide green metallic borders, the tail less reddish.

Island of Mafor only. Doherty sent us 5 ♂, 5 ♀, 3 juv., unfortunately mostly poor skins.

81. *Macropygia amboinensis griseinucha* Salvad.

We do not have specimens of this form, which inhabits Miosnom only. Originally it was described from Jobi and Miosnom. The specimen of *doreya*, mentioned above in the list of specimens of that form, is marked by Count Salvadori himself—a *Macropygia doreya* var. *griseinucha* Salvad. "Typus!" However, it is not at all *griseinucha*, as Count Salvadori has now restricted that name to the Miosnom birds, while he rightly considers the Jobi specimens to belong to *doreya*. This instance shows how misleading is the system of marking more than one specimen of a species or subspecies as "typus," a system still much in vogue among the French and some German zoologists; for example, in the Dresden Museum, whence several museums have received "types" of forms from the Celebes region and Timorlaut.

There seems to be no doubt that *griseinucha* belongs to the *amboinensis-doreya* group.

82. *Macropygia amboinensis albicapilla* Bp.

Differs at a glance from all the former representatives by its white or whitish forehead and very wide white tips to the breast feathers, as well as the pale buff underside.

M. a. albicapilla inhabits the Celebes region only, where it is found on Celebes itself, on Peling, Banggai, and in the Sula group. We have not seen sufficient adult specimens from the latter group, but it seems to us that the Sula birds incline to being smaller, and that they have a darker undersurface.

We have before us the following specimens:—

2 ♂, 2 ♀ collected between Menado and Arrakan by Cursham's natives.

1 ♂ Sikoepang, North Celebes (Powell coll.).

2 juv. Dongala (W. Doherty coll.).

1 ♂ Menado Toea (Cursham's natives coll.).

2 ♀ Lembeh (Cursham's natives coll.).

2 ♂ Banka (Cursham's natives coll.).

1 ♂, 1 ♀ Mantelage (Cursham's natives coll.).

1 ♂, 1 ♀, 1 juv. Banggai.

1 juv. Maros, 23.8.1883 (Powell coll.).

- 1 ♂, 1 ♀ Indralaman, South Celebes (A. Everett coll.).
 1 ♂, 1 ♀ Makassar (W. Doherty coll.).
 1 ♂, 1 ♀ Peling Island (Cursham's natives coll.).
 1 ♂, 1 ♀ Sula Besi (W. Doherty coll.).

83. *Macropygia amboinensis sangirensis* Salvad.

This form is as a rule easily distinguishable from *albicapilla* by its larger size and darker uppersurface, but intermediate specimens are not rare, and especially those from the islands between Sangi and Celebes, such as Ruang and Tagulandang, seem to be more or less intermediate.

Our following specimens must be regarded as *sangirensis*:—

- 3 ♂ Tagulandang (Cursham's natives coll.).
 1 ♂, 1 ♀ Gnnong Api (Cursham's natives coll.).
 1 ♀ Lirung, Talaut Islands (Cursham's natives coll.).
 2 ♂ Siao (Cursham's natives coll.).
 1 ♂ Siao (W. Doherty coll.).
 2 ♀ Karkelang, Talaut Islands (Cursham's natives coll.).
 2 ♂ ♀ Great Sangi (Cursham's natives coll.).

84. *Macropygia amboinensis batchianensis* Wall.

Head and throat rusty-rufous, lower throat and chest vinous, with more or less distinct indications of cross-bars. Distinguished from all the former subspecies by the evanescent or absent bars on the chest. Tail somewhat pale.

Northern Moluccas. We have the following specimens:—

- 1 ♂ Ternate (Beccari coll.).
 2 ♂, 1 ♀ Ternate (Powell & Guillemard coll.).
 1 ♂, 1 ♀ Ternate (W. Doherty coll.).
 1 ♀ juv. Gani, Halmahera (W. Doherty coll.).
 7 ♂, 3 ♀ Batjan, 4000 ft. (W. Doherty coll.).
 5 ♂, 2 ♀ Obi Major (W. Doherty coll.).
 1 juv. Morty (Dumas coll.).

The specimens from Obi Major do not seem to be separable from typical *batchianensis*.

85. *Macropygia amboinensis carteretia* Bp.

Breast and chest unbarred, head rufous-vinous, paling on the forehead, cheeks and throat.

Bismarck Archipelago, but we are in doubt about the New Hanover specimens.

We have before us:—

- 1 ♂ Duke of York Island (Th. Kleinschmidt coll.).
 1 ♂ New Britain (Th. Kleinschmidt coll.).
 1 ♂, 1 ♀, 1 juv. New Ireland, from an orchid hunter.

Captain Webster sent also three adult *males*, one *female* and a young bird from New Hanover. The *males* have more or less distinct bars on the chest, and we believe the New Hanover form will be separable. Our material, however, being so scanty, the bars being more or less developed, and indicated in one of our other specimens, we hesitate at present to separate them. Our New Britain *male* has the wing considerably longer than any of the other specimens.

86. *Macropygia amboinensis cinereiceps* Tristr.

D'Entrecasteaux Islands and British New Guinea.

The bars on the chest are very little marked, or quite obsolete; the forehead in the adult *males* pale ashy-grey or whitish, in younger ones rusty buff.

We have at present the following specimens:—

1 ♂ fully ad. Fergusson Island (A. S. Meek coll.) (Nov. Zool. III, p. 249).

1 ♂ not fully ad., crown moulting, Goodenough Island (A. S. Meek coll.).
“Iris with an inner pale blue ring, a median black and an outer light red ring; feet dark smoky red, bill dark brown.”

1 ♂ ad. Milne Bay (A. S. Meek coll.).

1 ♀ ad., 1 ♀ juv. Fergusson Island (A. S. Meek coll.).

We have, besides these specimens, examined the types (several of them are marked as types) of Count Salvadori's *Macropygia goldiei* in the British Museum, and we found the *males* to be less mature birds than what is called *M. cinereiceps* in the same Museum. We have a specimen moulting from the rusty-buff forehead of the so-called “*goldiei*” into the greyish one of *cinereiceps*; therefore *M. goldiei* is clearly a synonym of *M. amboinensis cinereiceps*.

87. *Macropygia amboinensis cunctata* Hart.

Differs from *M. amboinensis cinereiceps* in having the chest much darker, more brownish and distinctly barred; the wing is longer (cf. Nov. Zool. VI., pp. 83, 214).

Louisiade Islands. We have:—

1 ♂ ad., 1 ♀, 2 juv. Rossell Island (type) (A. S. Meek coll.).

1 ♂ Sudest Island (A. S. Meek coll.).

3 fairly adult *males*, 6 *females* and young birds from St. Aignan (A. S. Meek coll.).

88. *Macropygia ruficeps ruficeps* Gray.

With this form we have come to a small group which we regard as one species separable into three subspecies.

The typical *ruficeps* inhabits the Greater Sunda Islands (Java, Sumatra, Borneo), and the Malay Peninsula.

We have the following specimens:—

3 ♂, 5 ♀, 1 ♂ pull. Kina Balu, Borneo (John Whitehead and A. Everett coll.).

4 ♀, 2 ♂ jun. Padangsche Bovenlanden, Sumatra.

1 ♂ immature, Gunong Ijau, Perak, 4000 feet (A. L. Butler coll.).

We are sadly in want of perfectly adult *males*, and our series is not sufficient to say if those from the various islands differ.

89. *Macropygia ruficeps assimilis* Hume.

This is a much larger race, which replaces the typical *ruficeps* in Tenasserim and Burma.

We have 1 ♂ ad., Thongyeen Valley, Tenasserim (Col. Bingham coll.).

♀ ad., Salween Hills, 2000 ft. (Col. Bingham coll.).

90. *Macropygia ruficeps orientalis* Hart.

Also larger, much darker below, especially on the under tail-coverts, and the *females* and young birds almost without black spots on the chest. Replaces the

other subspecies on the Lesser Sunda Islands, namely, Bali, Lombok, Sumbawa (type), Flores, and Pantar.

We have the following specimens :—

1 ♂ ad. Bali (W. Doherty coll.). We consider this bird most certainly to belong to *orientalis*, although it is rather small.

1 ♂ ad. Lombok (A. Everett coll.).

1 ♂ ad., 1 ♀ ad., 1 juv. Sumbawa, 3000 ft. (W. Doherty coll.).

3 ♂, 3 ♀ and jun. South Flores (A. Everett coll.).

1 ♀ Pantar (A. Everett coll.)

91. *Macropygia nigrirostris* Salvad.

This small, very deep, almost uniform chestnut pigeon with a barred tail in all ages and sexes, stands quite by itself. It is distributed all over New Guinea and the Bismarck Archipelago.

We have the following specimens :—

2 ♀ Hatam, Arfak (from Bruijn's hunters).

2 ♂ ad. Dorey (W. Doherty coll.).

2 ♂ ad. Kapaur, above 2000 ft. (W. Doherty coll.). "Iris orange, black and whitish; feet carmine with black claws; bill black."

1 ♀ Lower Ambernoh River (Dumas coll.).

1 ♂ ad. Bonga, Kaiser Wilhelm's Land (Erik Nyman coll.).

1 ♀ juv. Duke of York Island, 23. ii. 1881 (Th. Kleinschmidt coll.).

1 ♂ ad. Mt. Gayata, Richardson Range, 2000 to 4000 ft. (E. Weiske coll.).

♂ ad. Fergusson Island (A. S. Meek coll.).

♀ Goodenough Island (A. S. Meek coll.).

1 ♂ immat. British New Guinea (Goldie coll.), without label.

92. *Macropygia rufa* Rams.

We have only one specimen from the New Hebrides (exact island and collector unknown, purchased in London).

This stands evidently quite apart from the other groups of the genus. The bifurcated chest-feathers are peculiar, and only to be found again in *M. rufocastanea* from the Solomon Islands. We consider these two forms subspecies of each other, and should call them—

Macropygia rufa rufa; and

Macropygia rufa rufocastanea.

(About *M. mackinlayi* Rams. see Salvadori's footnote in *Cat. B.* XXI. p. 364. From the description this bird would seem to be quite distinct.)

THE GENUS REINWARDTOENA.

We can distinguish the following forms (cf. *Nov. Zool.* VII. p. 240, 1900).

93. *Reinwardtoena reinwardtsi reinwardtsi* (Temm.).

Abdomen lavender-grey; breast white. Wing about 215—230 mm. Moluccas.

We have it from Batjan, Obi, and Ceram-laut.

2 Batjan (Powell and Guillemard coll.).

1 Batjan (from Waterstradt's natives).

- 3 said to be from Batjan.
- 2 said to be from Halmahera.
- 4 Obi Major (Doherty and Lucas coll.).
- 2 Ceram-laut (Kühn coll.).

94. *R. reinwardtsi albida* Hart.

Abdomen whitish, with a creamy tinge, only sides of abdomen very pale grey, neck and head above paler grey than in typical *reinwardtsi*. Wing about 226—235 mm.

Buru. Two specimens in the Tring Museum.

95. *R. reinwardtsi minor* (Schleg.).

Abdomen whitish, with a creamy tinge, only sides of abdomen pale grey, neck and head above almost white. Wing only about 210 mm.

Biak and Korrido (Schouten Islands).

We have 1 ♂ Biak (W. Doherty coll.). "Iris dull red, edged with black, and with an inner narrow ring of yellow; feet bright beet-red, claws black; beak and bare patch under the eyes dark red, tip of beak pale horn-colour."

96. *R. reinwardtsi grisotincta* Hart.

Underside to the throat dark lavender-grey. Wing about 228—248 mm. Upperside of neck and head dark grey.

New Guinea, Waigiu, Salwatty, Jobi, Mafor and Miosnom. We have the following 18 specimens :—

- 1 ♀ Waigiu (Powell coll.).
- 1 ♀ Sorong (D'Albertis coll.).
- 2 ♀ Kapaur (Doherty coll.).
- 1, not sexed, Ansus, Jobi (Doherty coll.).
- 1, not sexed, Serui, Jobi (Doherty coll.).
- 1 ♂ Ron Island (Doherty coll.).
- 1 ♂ Anday (Bruiju's hunters).
- 1, not sexed, Etna Bay (Webster coll.).
- 1, not sexed, Konstantinhafen (Kubary coll.).
- 1 ♀ Sattelberg (Nyman coll.).
- 1 ♂ Simbang (Webster and Cotton coll.).
- 1 ♀ Milne Bay (Meek coll.).
- 1 ♂ Fergusson (Meek coll.).
- 1 ♂ Goodenough (Meek coll.).
- 1 ♀ Mailu district (Anthony coll.).
- 1 ♂ Mt. Cameron, Owen Stanley Range (Anthony coll.).
- 1 ? Fly River (bought from Whitely).

97. *R. browni* (Scl.).

This species inhabits the Duke of York, New Britain, and New Ireland group.

We have seven skins :—

- 3 New Britain (Th. Kleinschmidt coll.).
- 3 New Ireland (purchased in London).
- 1 Duke of York (Rev. G. Brown coll.).

98. *Chalcophaps indica* (Linn.).

Our series consists at present of the following material :—

- 2 ♂ ad., 1 ♀ ad. Sikkim (Nat. coll.).
- 2 ♂, 1 ♀ ad. North Cachar Hills (E. C. S. Baker coll.).
- 1 ♀ ad. Ceylon, 4500 ft. (S. Blyth coll.).
- 2 ♂ ad. 1 ♂ ♀ juv. South Audamaus (A. L. Butler coll.).
- 1 ♂ ad. Nagoya, Japan (Nat. coll.).
- 1 ♀ ad. Formosa (Swinhoe coll.).
- 2 ♂ ad., 1 juv. North Luzon (J. Whitehead coll.).
- 1 juv. South Luzon (J. Whitehead coll.).
- 1 ♀ ad. Ayala, Mindanao (from an orchid hunter).
- 1 ♂ ad. Zamboanga, Mindanao (A. Everett coll.).
- 2 ♂ ad. Davao, Mindanao (Dr. C. Platen coll.).
- 1 ♀ ad. Negros (J. Whitehead coll.).
- 1 ♂ ad. Mindoro (J. Whitehead coll.).
- 1 ♂ ad. Puerto Princesa, Palawan (Dr. C. Platen coll.).
- 1 ♀ ad. Palawan (J. Whitehead coll.).
- 1 ♂ ad. Sulu (Dr. C. Platen coll.).
- 1 ♂ ad. Malacca (Nat. coll.).
- 2 ♂, 2 ♀ ad. Labuan, North Borneo (J. Whitehead coll.).
- 1 juv. Kina Balu, Borneo.
- 1 pull. Mt. Dulit, Borneo, 4500 ft. (C. Hose coll.).
- 1 ♂, 1 ♀ juv. Rakoetak, Java, 3500 ft. (Prillwitz coll.).
- 2 ♂ ad., 1 ♀ juv. Bali (Doherty coll.).
- 1 ♂ juv., 1 ♀ ad. Lombok (Everett coll.).
- 1 ♂ ad. Lombok (Doherty coll.).
- 1 ♂ ad. Tambora, Sumbawa (Doherty coll.).
- 1 ♂ ad. Gunung Api, Sumbawa (Powell coll.).
- 2 ♂ ad. Sumba (Everett coll.).
- 1 ♀ ad. 1 ♂ ♀ juv. Sumba (Doherty coll.).
- 1 ♂ ♀ ad. South Flores, 3500 ft. (Everett coll.).
- 1 ♂ ad., 1 ♂ juv. Alor or Ombay (Everett coll.).
- 1 ♀ ad. Indralaman, South Celebes (Everett coll.).
- 1 ♀ ad. Tagulandang, Celebes (Cursham's natives coll.).
- 1 ♀ ad. and juv. Banka (Cursham's natives coll.).
- 1 ♀ ad. Gunung Api, Celebes (Cursham's natives coll.).
- 2 ♂ ad. Between Menado and Arakan (Nat. coll.).
- 1 ♂ ad. Dongala, Celebes (Doherty coll.).
- 2 ♀ Karkellaug, Talaut (Cursham coll.).
- 1 ♀ ad. Lirung (Nat. coll., J. Waterstrad).
- 1 ♀ ad. Sula Besi (Doherty coll.).
- 1 ♀ juv. Sula Mangoli (Doherty coll.).
- 1 ♀ juv. Manawoka, Gorom Island (Kühn coll.).
- 1 ♂ ad., 1 ♀ juv. Maar Island, Ceram-laut (Kühn coll.).
- 1 ♂ ad. Teoor Island (Kühn coll.).
- 2 ♂ ad., 1 ♀ juv. Batjan (Doherty coll.).
- 1 ♂ ad. Mefor (Doherty coll.).

1 ♂ ad. and juv. Biak (Doherty coll.).

74 specimens in all.

A curious fact in the distribution of this bird is the extent of its range to the northern islands in Geelvink Bay, while we have no record whatever of the occurrence in New Guinea.

Our specimens from Mefor and Biak are remarkably dark on the undersurface, but our material is too scanty to admit of their separation as a subspecies, especially since they are matched by some specimens from other countries.

Dr. A. B. Meyer and Wigglesworth in their grand work on the Birds of Celebes doubt somewhat the possibility of separating *Chalcophaps indica sanghirensis* Blas., but the absence of the grey colour from the crown and mere indication—instead of strong development—of the white superciliary line seem to be peculiar to *sanghirensis*, and we therefore consider the latter well worthy to be admitted as a subspecies.

The form from Christmas Island (north of Java), known as *Chalcophaps natalis* Lister, is evidently only a subspecies of *Ch. indica*, as the red rump and central rectrices which are so remarkable in the female, are sometimes strongly indicated in specimens from other countries as well.

We have one *male* and two *females* collected by C. W. Andrews.

99. *Chalcophaps chrysochlora* (Wagl.).

Of this wide-spread pigeon—it extends from Timor over the South-East and Key Islands, and Southern New Guinea to the New Hebrides and Australia—we have the following specimens before us :—

1 ♂ ad., 2 ♂ juv. Atapupu, Timor (A. Everett coll.).

1 ♀ ad. Timor-Laut (H. O. Forbes coll.).

1 ♂ ad., 2 ♀ ad., 1 ♀ juv. Koer Island (H. Kühn coll.).

2 ♂ ad.; 1 ♀ juv. Manggoer Island (H. Kühn coll.).

1 ♂ ad., 12 ♂ juv., 1 ♀ ad. Toeal, Little Key Island (H. Kühn coll.).

2 ♂ ad., 2 juv. Woeloer, Dammer Island (H. Kühn coll.).

3 ♂ ad., 2 ♀ ad., 1 juv. Great Banda (H. Kühn coll.).

4 New Hebrides.

1 Vate, New Hebrides (Layard coll.).

♂ ♀ Naiabui, New Guinea (D'Albertis coll.).

2 ♀ juv. Rossel Island (A. Meek coll.).

2 ♂, 4 ♀ ad. St. Aignan (A. Meek coll.).

♂ ♀ ad. Woodlark (A. Meek coll.).

♂ ♀ ad. Trobriand Island, Kiriwini Group (A. Meek coll.).

1 ♂ ad. Fergusson Island (A. Meek coll.).

1 ♂ ad. Australia (from Sale-room).

1 ♀ ad. New South Wales (Hügel coll.).

1 ♀ ad. Richmond River, Queensland (Cockerell coll.).

1 ♀ juv. Cooktown (Olive coll.).

1 Norfolk Island (purchased from H. Travers).

100. *Chalcophaps stephani* Reichenbach.

We have at present 37 specimens :—

1 juv. Menado, Celebes (Nat. coll.).

1 ♀ Macassar (Doherty coll.).

- 2 ♂ Tawaya, Celebes (Doherty coll.).
 3 ♂ juv. Dorey (Doherty coll.).
 1 ♀ Andai (from Bruijn's hunters).
 1 ♀ Ron Island (Doherty coll.).
 1 ♂ juv. Kafu (from Bruijn's hunters).
 1 ♂, 1 juv., 1 ♀ Kapaur (Doherty coll.).
 1 ♀ (?) Djamma.
 2 ♂, 1 ♀ Takar (Doherty coll.).
 1 ♂ juv. Dobbo, Aru Islands (Captain C. Webster coll.).
 1 ♂, 1 ♀ Jobi Island (Doherty coll.).
 1 ♂ ad. Fergnsson Island (A. S. Meek coll.).
 1 ♀ ad. Mioko (T. H. Kleinschmidt coll.).
 1 ♂ ad. New Britain (Kubary coll.).
 1 ♂ ad. Blanche Bay, New Britain.
 1 ♀ ad. Duke of York Island (Kleinschmidt coll.).
 1 ♀ ad. New Ireland.
 2 ♂ New Hanover (Captain C. Webster coll.).
 1 ♀, 2 ♂ juv. Mysol (Kühn coll.).
 3 ♂ ad. Toeal, Key Islands (Kühn & Webster coll.).
 2 ♂ ad. Brown River (Weiske coll.).
 1 ♂ ad. Goodenough Island (Meek coll.).

If *Chalcophaps mortoni* is separable at all, it is only slightly larger. We have one ♂ ad. collected by Woodford on Guadalcanar whose wing measurement is 153 mm., while the average of the true *Ch. stephani* is 145 mm. We have, however, specimens reaching 149, 159, and 151 mm., so that we think it possible that the Solomon form will not be separable.

101. *Henicophaps albifrons* G. R. Gray.

Inhabits New Guinea, the Western Papuan, and Aru Islands. We have the following 17 specimens:—

2 ad., 3 juv. without labels, but evidently from North-Western New Guinea, purchased from feather-dealers.

1 ad. without locality, purchased from Gerrard, probably from British New Guinea (? Goldie coll.).

1 ♂ ad. Waigiu (from Bruijn's hunters).

2 ♂ Sogere, Owen Stanley Mountains 1200 and 2000 ft. (H. O. Forbes coll.).

2 Brown River, British New Guinea (E. Weiske coll.).

1 Mt. Cameron, British New Guinea (A. S. Anthony coll.).

1 ♀ Fly River (D'Albertis coll.).

2 ♀ Milne Bay (A. S. Meek coll.).

1 ♂ Wokan, Aru Islands (Hch. Kühn coll.).

1 ♀ Kobroor, Aru Islands (Hch. Kühn coll.).

The last two specimens from Aru are darker on the hindneck and underside, but almost matched by specimens from South-East New Guinea, and not quite like each other. Should further material prove the possibility of separating the Aru birds from those of New Guinea, then the former would have to be called *Henicophaps albifrons schlegeli* Rosenb.

102. *Phlegoenas margaritae* (D'Alb. & Salvad.).

Our series of this most beautiful bird is not very good. We have at present only the following 12 specimens :—

- 1 ♂, 1 ♀, (?) 1 juv. from Dutch New Guinea bought from plumassiers.
- 1 ♀ (?) Kafu (from Bruijn's hunters).
- 2 ♀ Mt. Gayata, Richardson Range (E. Weiske coll.).
- 1 ♂ (?) Mullins Harbour, British New Guinea (A. S. Meek coll.).
- 5 immature birds from New Ireland (from an orchid hunter).

103. *Phlegoenas johannae* Scl.

One adult and one nestling from New Hanover (Capt. C. Webster coll.).

104. *Phlegoenas beccarii* (Salvad.).

Of this rare pigeon we have only two young birds collected by Emil Weiske on the Upper Aroa River, between 3000 and 7000 ft. above the sea. A series of adult individuals from the Berau Peninsula should be compared with a series from British New Guinea. There are probably differences enough for a subspecific separation.

105. *Phlegoenas rufigula* Bp.

Ornithologists have separated two species, one called *rufigula*, from New Guinea and the Western Papuan Islands, and another called *helciventris* from the Arn Islands and the Fly River region in Southern New Guinea. These two forms are very closely allied, and cannot be anything else than subspecies, the only differences that can be relied on apparently being the more developed grey area at the sides of the occiput in true *rufigula*. It seems to us that specimens from the Berau Peninsula and Triton Bay have this grey band still more developed than those from British New Guinea. In this case three forms might be distinguishable.

We have at present the following specimens :—

1. What we should call *P. rufigula rufigula* : ♂ ad. Dorey (W. Doherty coll.). "Iris dull purple with an inner reddish line; feet purple; soles nearly white; bill blackish, tinged with red; tip paler."

♂ (?) ad. Triton Bay (Capt. C. Webster coll.).

♂ ad. Arfak (from Bruijn's hunters).

♀ immat. Mansinam (from Bruijn's hunters).

2. Typical *P. rufigula helciventris*.

2 ♂ ad. Wokan, Aru Islands (H. Kühn coll.).

3. Six skins which seem to be intermediate between typical *rufigula* and *helciventris*, the grey band on the sides of the occiput, which is quite absent in *helciventris*, being present, but apparently less extended than in the typical *rufigula*.

1 ad. near Humboldt Bay (Dumas coll.).

2 ad. Upper Brown River (E. Weiske coll.).

1 ♂ ad., 1 juv. Mt. Cameron, 5000 to 6000 ft. (Anthony coll.).

2 ♂ ad., 1 juv. Milne Bay (A. S. Meek coll.). "Iris brown, feet purple, bill light purplish-brown."

106. *Trugon terrestris terrestris* G. R. Gray.

We have the following 8 skins :—

- 1 Salawatti (Bruijn's hunters).
- 1 Andai (Bruijn's hunters).
- 2 Dutch New Guinea (Bruijn's hunters).
- 1 Mansinam (Bruijn's hunters).
- 1 Etna Bay (Captain C. Webster coll.).
- 2 Humboldt Bay (Dumas coll.).

107. *Trugon terrestris leucopareia* (Meyer).

This form differs from the preceding only by the whiter sides of the face and neck, and the wing-coverts are more washed with bronzy brown. We have 8 specimens :—

- 2 South-Eastern New Guinea (Goldie coll.).
- 1 ♂, 3 ♀ Milne Bay (Meek coll.). Iris bright red, feet transparent, and bill fleshy-white.
- 1 Brown River (Weiske coll.).
- 1 Port Moresby (Weiske coll.).

THE GENUS OTIDIPHAPS.

The genus *Otidiphaps* comprises three forms, which inhabit New Guinea and Fergusson Island. They replace each other geographically and are undoubtedly close allies, but as their characters are very clear and constant and no intermediate specimens known, Mr. Rothschild is of opinion that it is more advisable to treat them as species, binomially named, instead of as subspecies, although they are closely allied. We do not know the young birds.

108. *Otidiphaps nobilis* Gould.

Hindneck with a large bronzy-green patch ; chest deep purple ; rump purple ; back and wings purplish-chestnut. Western New Guinea and Batauta.

We have six skins without labels, but all, as shown by their preparation, undoubtedly from N.W. New Guinea.

- 1 purchased by Doherty at Waropen, not far from Kurudu.
- 1 bought by Doherty at Serni, Jobi, and said to have been killed there (?).
- 3 Arfak (from Bruijn's hunters).
- 1 labelled "Arfak" by A. Boncard.
- 1 Dorey, from Powell (evidently bought).
- 2 Etna Bay (Capt. C. Webster coll.). One of these seems to be less mature, and has the breast and chest more metallic green, less purple.

109. *Otidiphaps cervicalis* Rams.

Differs from *O. nobilis* in a greyish-white, not green, patch on the hindneck, deep dull green rump and upper tail-coverts and deep greenish breast. It is only known from British New Guinea.

We have five skins, namely, two without label, two from between the rivers Laroki and Vanapa, apparently collected by E. Weiske, and one shot near Milne Bay by A. S. Meek. "Iris blood-red, feet reddish-yellow, bill purple."

110. *Otidiphaps insularis* Salvin & Godm.

Hindneck blue-black without a light patch. Underside dull purple, washed with greenish across the chest. Back and wings cinnamon instead of purplish-chestnut, lower back and rump dull green, changing into purple towards the upper tail coverts.

Only known from Fergusson Island. Mr. Albert S. Meek sent us one specimen marked *female*, with the "iris dark red, feet greenish-yellow, bill dark crimson."

111. *Caloenas nicobarica* (L.).

Of this emphatically insular pigeon we have at present forty specimens:—

- ♂ ad., ♀ ad., ♂ jnv. Car Nicobar (A. L. Butler coll.).
- 2 Palawan (Dr. Platen coll.).
- 1 Luzon (Marche coll.).
- ♀ ad. Sibutu (A. Everett coll.).
- 3 ♂, 3 ♀ Pulo Tega, North Borneo (John Whitehead coll.).
- 1 Karamon Island, near Labuan (A. Everett coll.).
- ♀ Toeal, Little Key (H. Kühn coll.).
- ♀ Soa Island, near Little Key (H. Kühn coll.).
- ♂ Teniai, Taam Islands (H. Kühn coll.).
- ♀ Bisa, near Obi, Moluccas (W. Doherty coll.).
- ♂ ♀ Satonda, near Sumbawa (W. Doherty coll.).
- 1 juv. Ansum, Jobi (from Bruijn's hunters).|
- ♂ Ansum, Jobi (W. Doherty coll.).
- ♀ Mafor (W. Doherty coll.).
- 2 pull. Dutch New Guinea (native coll.).
- ♀ Trobriand (A. S. Meek coll.).
- ♂ Egum group (A. S. Meek coll.).
- 2 ♂, 1 ♀ St. Aignan, Lonsiades (A. S. Meek coll.).
- 1 ♂, 2 ♀ Rossel Island, Lonsiades (A. S. Meek coll.).
- 3 New Hanover (Capt. C. Webster coll.).
- 2 ♂ Fauro, Shortland Islands (Wahnes & Ribbe coll.).

*In all this series, from so many different localities, we are, in accordance with all ornithologists, not able to discover any characters for the separation of different local forms.

The *Caloenas pelewensis* of the *Catalogue of Birds* we consider a subspecies of *nicobarica*.

The most peculiar *Caloenas maculata*—correctly identified as a *Caloenas* by Wagler—is certainly not the young of *C. nicobarica*, as the young are almost quite like the adults, and not spotted. It is extraordinary that the home of this bird is not yet discovered, and we suggest the possibility—although there were two specimens—that it is an abnormality. This bird is well figured in the first volume of the *Bulletin of the Liverpool Museums*, where the type is preserved.

THE GENUS GOURA.

112. *Goura coronata* (L.).

Western New Guinea (Beran Peninsula, shores of Geelvink Bay to Etna Bay, Waigin, Batanta, Salwatty and Mysol).

We have 16 specimens, 12 of which are more or less typical, while 4 are albinistic varieties.

2 Etna Bay, 1 Triton Bay (Cayley Webster coll.).

These three specimens appear rather large, wings about 385 mm., crests about 180 mm.

1 ♂, 1 ♀, 1 not sexed Dorey (Guillemard & Powell coll.).

1 ♂, 1 ♀ Mysol (Powell coll.).

2 ♂, 1 ♀ 1 not sexed Waigin (Guillemard & Powell coll.).

Of the four albinistic varieties, one is the type of *G. cinerea* Hart. (Nov. Zool. 1895 p. 67).

We are now, however, convinced that this bird is only a curious pale aberration of *G. coronata*, because a considerable number of the wing-feathers are not uniform, but particoloured, being of a somewhat irregular mixture of yellowish-white and dirty grey, and because some of the others approach this bird in more than one particular.

113. *Goura scheepmakeri* Finsch.

We are convinced that this name must be used to embrace the three birds called *Goura sclateri*, *G. albertisi*, and *G. scheepmakeri* in the *Catalogue of Birds*. Moreover, from the tendency to variation exhibited by most of the members of the genus *Goura*, we consider that *G. scheepmakeri*, only being known from a single specimen, is more than likely to be only an aberrant specimen,* and so, for the present, we treat these three supposed forms as two subspecies only, as follows:—

114. *Goura scheepmakeri scheepmakeri* Finsch.

(Synonym: *Goura albertisii* Salvad.).

Hab. South-Eastern New Guinea.

We have nine specimens:

3 Brown River (E. Weiske coll.).

4 Nicura (Lix coll.).

2 Mailu district (Anthony coll.).

115. *Goura scheepmakeri sclateri* Salvad.

Fly and Kataw Rivers.

We have 3 specimens:—

2 ♂, Fly River (D'Albertis coll.).

1 without locality.

This form differs from the former in having a whiter speculum and chestnut tips to the upper wing coverts.

* Since we wrote the above I have examined the type of *Goura scheepmakeri* in the Milan Museum. It is a young bird with a small crest, altogether different from the figure in the *Proc. Zool. Soc. Lond.* It differs from the forms known as *G. sclateri* and *G. albertisi* in the absence of the maroon tips to the feathers forming the alar speculum and in the paler and less extended maroon colour below, which has a yellowish tinge. It agrees with *G. albertisi* in the absence of the maroon upper wing-coverts. Although the alar speculum is decidedly greyer than in normal *G. sclateri* and *G. albertisi*, I am convinced, from examining this specimen, that it is only a rather abnormal immature specimen of *G. albertisi*, especially as the two anterior feathers of the speculum show decided traces of chestnut tips.—W. R.

116. *Goura victoria victoria* Fras.

Jobi and Schouten Islands in Geelvink Bay, and perhaps coasts of Geelvink Bay.

We have before us seven skins :

- 1 albinistic variety, without locality.
- 1 bought at Waropen by William Doherty.
- 1 Biak (W. Doherty coll.).
- 1 Serni, Jobi, bought by W. A. Doherty.
- 2 (♂ ♀) Jobi (Guillemard coll.).
- 1 ♂ Ansus, Jobi (Powell coll.).

117. *Goura victoria beccarii* Salvad.

This subspecies only differs from typical *G. victoria* in its larger size and paler, more blue-grey colour of the upper-surface. The white tips to the crest-feathers are also generally wider.

We have five specimens :—

- 1 (?) Humboldt Bay (purchased from a dealer).
- 2 Konstantinhafen (Kubary coll.).
- 2 Stephansort (Kubary coll.).

118. *Goura victoria huonensis* A. B. Meyer.

Dr. A. B. Meyer has, under the name of *Goura beccarii huonensis*, separated a third form of the *victoria* group,* which he describes as differing from *beccarii* by its larger size and more bluish colour above. This would then be a further development in the same direction in which *beccarii* differs from *victoria*. We have, unfortunately, no specimens from Huon Gulf or from farther south-east. The statement of the larger size of *huonensis* is not borne out by the author's measurements ; in fact, we have a specimen of still greater measurements.

The colour-differences mentioned by Dr. Meyer are unimportant, as our specimens vary somewhat *inter se*, but quite what one might expect from the Huon Gulf district, where many forms differ from those found on the northern coast from Humboldt Bay to Astrolabe Bay.

IV. MEGAPODIIDAE.

1. *Megapodius duperreyi duperreyi* Less. & Garn.

Mr. Ogilvie-Grant, in Vol. XXII. of *Cat. B. Brit. Mus.*, has enumerated seven species which come within our area. He unites *Megapodius affinis* Meyer with *M. forsteni*. From the examination of our material we have come to the conclusion that there are two species and a number of subspecies in the Papuan subregion, and that *affinis* is separable as a subspecies. The typical *duperreyi* has a very wide area. It was originally described from Dorey, and ranges from the Lesser Sunda Islands to the Torres Straits. Mr. Ogilvie-Grant unites with it the *M. tumulus* from North Australia, contending that, although the majority of *duperreyi* were widely different from typical *tumulus*, every intermediate colouration was found. We concur in this

* *Orn. Monatsber.* 1893, p. 65.

opinion in so far that we unite *M. tumulus* as a subspecies with *M. duperreyi*, because of these intermediate specimens: but we cannot see the force of ignoring the fact that the majority of Australian specimens are easily separable by their darker and more rufous upper-surface. They also appear to be larger, the wings averaging from 250 to 270 mm. in *tumulus*, and from 230 to 255 mm. in *duperreyi*.

We have the following 60 specimens of typical *duperreyi* before us:—

- 2 ♀ North Lombok, 3000 ft. (Alfred Everett coll.).
- 1 ♂, 1 pull. Tambora, Sumbawa (W. Doherty coll.).
- 2 ♂ Sumba (A. Everett coll.).
- 2 ♂ Djampea (A. Everett coll.).
- 2 ♀ Alor (A. Everett coll.).
- 2 ♂ Flores (A. Everett coll.).
- 1 ♂, 2 ♀, 1 (sex ?) Dammer in the Banda Sea (H. Kühn coll.).
- 1 ♂, 2 ♀ Great Banda (H. Kühn coll.).
- 4 ♀, 1 juv., 1 pull. Tocai, Key (H. Kühn coll.).
- 4 ♂, 2 ♀ Teoor (H. Kühn coll.).
- 3 ♂, 1 sex ? Kisoelin, Koer Islands (H. Kühn coll.).
- 2 ♀ Kisoeli (H. Kühn coll.).
- 2 Dobbo, Aru (C. Webster coll.).
- 1 ♀ Dobbo, Arn (H. Kühn coll.).
- 2 juv. Dobbo, Arn (Kühn & Webster coll.).
- 1 ♀ Trangan, Arn (H. Kühn coll.).
- 2 ♂ Giabu-lengan, Arn (Beccari coll.).
- 1 Dorey, New Guinea (Powell coll.).
- 4 Arfak (from Bruijn's hunters).
- 2 Amberbaki (Laglaize coll.).
- 1 Mansinam (Beccari coll.).
- 1 ♀ Has (Beccari coll.).
- 1 ♂ Kapaur (W. Doherty coll.).
- 2 Nicura, British New Guinea (Lix coll.).
- 1 juv. Sogeri district (British New Guinea: nat. coll.).
- 1 "Torres Straits" (purchased from Gerrard).
- 1 said to be from Moroka district, 3000 to 6000 ft. (purchased in London).

This last specimen appears to differ from all the rest of our *M. duperreyi* by having an almost naked throat and blackish feet and legs. It probably will prove to be an undescribed mountain subspecies, but we dare not describe it from one individual only.

2. *Megapodius duperreyi tumulus* Gould.

Differs from *M. duperreyi duperreyi* by its darker and more rufous upper-surface. It inhabits North-Eastern Australia.

We have the following 10 specimens:—

- 1 Cape York (Cockerell coll., per A. von Hügel).
- 1 Somerset, Cape York (D'Albertis coll.).
- 1 ♂, 1 ♀, 2 pull. Cedar Bay, North Queensland (A. S. Meek coll.).
- 1 ♂ Mount Sapphiri, Cairns (Olive coll.).
- 3 without exact locality.

3. *Megapodius duperreyi forsteni* Gray.

Differs from *M. duperreyi duperreyi* in its dark olive-brown and not reddish legs. The upperside is also darker, the under tail-coverts are not so rufous, but more deep brown, the abdomen less greyish. This form is confined to the Southern Moluccas, Ceram, Amboina, Buru, and Haraku.

We have the skins of six adults from Buru, collected by Doherty, Dumas, and Bruijn's hunters.

4. *Megapodius duperreyi affinis* Meyer.

Very similar to *M. duperreyi forsteni*, but smaller, and the abdomen generally more washed with rufous, as a rule somewhat lighter, more like *M. duperreyi duperreyi* in colour, but with dark legs, like *forsteni*! Doherty notes; "Iris chestnut, feet almost black, bill dull olive-brown, darker at base."

We have before us 10 adults and one chick collected on Jobi Island by William Doherty and Bruijn's hunters.

It must be remarked that the name *affinis* was given to specimens from Rubi, but we have not seen any from New Guinea, and it is therefore quite possible that those from New Guinea again differ from the Jobi Island ones, in which case the latter would require a new name.

Specimens from d'Urville Island or Tarawai, *M. decollatus* Oust., 1878, should also be re-examined. It seems to us somewhat hazardous to unite *decollatus* with the Jobi Island birds without actual comparison. According to Onstael himself (1881) his *decollatus* does not differ from the Rubi examples, the types of *affinis*; but actual comparison with Jobi ones does not seem to have been effected. From the locality one might come to think that *decollatus* would be the same as *brunneiventris* rather than *affinis*.

5. *Megapodius duperreyi brunneiventris* Meyer.

We are fortunate in having one skin (sex not stated) from the original locality, Stephansort, Astrolabe Bay, Kaiser Wilhelm's Land, collected by the late Dr. Erik Nyman. This specimen is quite like our "*affinis*" from Jobi Island, except that the abdomen and outer aspect of the wings are a shade more rufous, and the wing measures about 1 cm. more than those of our Jobi examples, which we provisionally called *affinis*. It is quite possible that this form, if it is well separable, may have to be called *decollatus*.

6. *Megapodius duperreyi eremita* Hartl.

Differs from the previous forms by its almost bare reddish forehead and perhaps smaller skull. The feathers of the crown are rather short, not forming a distinct crest. Mr. Grant has united (*Cat. B. Brit. Mus.* XXI. p. 453) the forms from the Bismarek Archipelago and the Solomon Islands under the name of *eremita*. The type of *eremita* came from the Echiquier Islands, west-north-west from the Admiralty group, and not from "Bougainville Island," as stated by Mr. Grant. It is true that Hartlaub says the Echiquier Islands were also called Bougainville Islands, but that is not Bougainville Island! The Echiquier bird is said to be the same as those from the Admiralty group and the Bismarek Archipelago, where

the same form seems to occur. We are not sure, however, that the Solomon Islands form is quite identical, our specimens being apparently slightly less rufous on the back and wings ; but this requires confirmation.

Our material consists at present of the following eight specimens :—

- ♀ ad. New Hanover (C. Webster coll.).
- 1 New Ireland (from an orchid hunter).
- 2 New Britain (J. Kubary coll.).
- 1 New Britain, purchased through the Linnaea.
- 2 Shortland Islands, Solomon group (Wahnes & Ribbe coll.).
- 1 ♀ Aola, Guadalcanar (C. M. Woodford coll.).

7. *Megapodius duperreyi macgillivrayi* Gray.

In the colonration of its plumage almost exactly like *M. d. forsteni*, but nearer to *M. d. eremita* in having a bare forehead. The skin of the forehead, however, is blackish, not reddish, and the legs are bright yellow, not blackish. The head feathers are somewhat elongated, almost forming a short thick crest, as in *forsteni*.

We have 14 skins collected by Albert S. Meek on Woodlark Island, Trobriand, and on Rossel and St. Aignan in the Louisiades group.

8. *Megapodius freycinet freycinet* Quoy et Gaim.

Megapodius freycinet must evidently be kept specifically separate from the *duperreyi* group. Its plumage is black, the forehead and throat but scantily feathered, and it occurs in several places together with *duperreyi*. The typical *freycinet* inhabits the Northern Moluccas, Western Papuan Islands, and N.W. New Guinea.

We have the following 21 specimens :—

- 1 ♂ Ternate (W. Doherty coll.). "Feet blackish."
- 2 Halmahera (from Bruijn's hunters).
- 4 Batjan, from Doherty, Guillemard & Waterstradt's natives.
- 1 Morty (Dumas coll.).
- 1 Bisa, Obi group (W. Doherty coll.).
- 2 Obi Major (W. Doherty). "Feet dull blackish."
- 1 " (W. Lucas coll.).
- 4 Waigiu (from Bruijn's hunters).
- 1 " (Guillemard coll.).
- 4 ad. Mysol (H. Kühn coll.). "Feet brownish black."
- 1 juv. " (Wallace coll.).

Also seven without localities.

9. *Megapodius freycinet geelvinkianus* Meyer.

Differs from *M. freycinet freycinet* in having the legs mostly reddish, and the skin of the scantily feathered throat and head bright red, instead of dull and pale reddish. It is known to occur on Mafor, Miosnom, and Jobi. We have only three from Mafor, collected by W. Doherty. "Iris deep chestnut ; feet mostly red, toes dark ; bill blackish, gape and tip dull orange."

10. *Talegallus cuvieri cuvieri* Less.

Western New Guinea (Berau Peninsula), Salwatty, and Mysol, but never in the Moluccas. The locality "Gilolo," which is given in the *Cat. B. Brit. Mus.* XXII. p. 465, on the evidence of a purchased skin without history, is erroneous.

Pileum covered with thin, hair-like feathers, which are recumbent on the forehead. Bill red.

We have :

3 ♂, Mysol (H. Kühn coll.). "Iris pale brown or yellowish; feet pale chromeous; bill blood-red."

1 Sorong (from Bruijn's hunters).

1 Andai (D'Albertis coll.).

1 Mt. Arfak (from Bruijn's hunters).

1 Mansinam (Guillemard coll.).

1 Salwatty, collector unknown.

3 without locality.

11. *Talegallus cuvieri fuscirostris* Salvad.

Pileum covered as that of *T. cuvieri cuvieri*, from which it differs merely in its dark brown bill. The skin of the neck seems also to be darker.

Aru Islands and South-Eastern New Guinea. Mr. Kühn sent us four skins from Wokan, Trangan and Sungi Barkai in the Aru Islands, and we have two from Nieura, and one from the Aroa River in British New Guinea. The latter three seem to have the feathers on the forehead longer. More material must be compared in order to say if this is an individual or racial character.

12. *Talegallus jobiensis jobiensis* Meyer.

Pileum with wider feathers with well-developed webs. It seems that *jobiensis* must be separated specifically from *cuvieri*. Its pileum is very differently covered; there seems to be an inclination or a well-developed rufous area on the neck, and a form of it apparently occurs together with a form of the *cuvieri* group in S.E. New Guinea.

Of the typical *jobiensis* we have the following specimens:—

6 ad., 1 juv. Jobi (from Bruijn's hunters).

2 "Talandjang" (from Bruijn's hunters).

1 Kaririri, Jobi, bought by Doherty.

1 Serni, Jobi (W. Doherty coll.).

1 Marai, Jobi (W. Doherty coll.).

1 Takar (W. Doherty coll.). "Iris chestnut; feet pale coral, claws corneous; bill dusky reddish, base of culmen dark."

It is very doubtful whether this bird from Takar belongs to typical *jobiensis* or to *longicaudus*. Its tail is moulting and most of it missing.

13. *Talegallus jobiensis longicaudus* Meyer.

Differs only from *T. jobiensis jobiensis* in having a longer tail, which is 180–190 mm. long in our specimens, but 160–175 in our true *jobiensis*. The alleged more blackish colour is not apparent, but it seems that the rufous colour

on the neck is more developed and extended, while it is merely indicated or absent in *T. jobiensis jobiensis*. This is a rather poor form, but should not be cast aside. To it belong the specimens from Kaiser Wilhelm's Land as well as those from British New Guinea.

The specimen enumerated under *jobiensis* in the *Cat. B. Brit. Mus.* XXII. p. 467 is therefore *longicaudus*. We have :—

1 ad. Stephansort (E. Nyman coll.).

1 German New Guinea (Webster & Cotton coll.).

1 ad. 1 pull. Aroa River (E. Weiske coll.). "Iris, feet and skin of head and neck red."

14. *Aepyodius bruijni* Oust.

Differs from *Ae. arfakianus* in many important points. The colour above is brownish-black, instead of jet-black. The rump is dark chestnut instead of rufous. Chest and breast variegated with chestnut and dark grey, instead of entirely blackish. Head covered with rough granulations, but without a comb. The hindneck is bare of feathers, and has in the adult bird two distinct wattles, while *Ae. arfakianus* has the hindneck feathered and no wattles. Only known from Waigiu.

We have seven specimens from Waigiu, collected by Bruijn's hunters.

15. *Aepyodius arfakianus* Salvad.

Ae. arfakianus was described from chicks from Arfak, and it was Schlegel who two years later described the first adult *Aepyodius* under the name of *pyrrhopygius* from the west coast of Geelvink Bay. We agree with Mr. Ogilvie Grant that the practice of naming chicks is most undesirable, but as there is no definite evidence to prove that Salvadori's chicks belong to another species of *Aepyodius*, we think it best to retain his name for the present. *Ae. arfakianus* is known from the Berau Peninsula and from British New Guinea, and we have a specimen bought by Mr. Doherty on Jobi.

We have the following specimens before us :—

2 Berau Peninsula (from Bruijn's hunters).

1 Dutch New Guinea, bought from Mr. Van Renesse van Duivenbode.

1 ♀ Mt. Cameron, Owen Stanley Mts., 6500 ft. (A. S. Anthony coll.).

1 Mt. Victoria, Owen Stanley Range, 5 to 7000 ft. (native coll.).

1 shot between rivers Laroki and Vanapa (Weiske coll. 1897).

1 "Kariri, Jobi, May 1897. Feet blackish, comb and wattles bright red, rest of head dull red. Bought." (W. Doherty coll.)

V. RALLIDAE.

1. *Rallina tricolor* Gray.

This species seems to occur all over New Guinea and the adjacent islands. We have not been able to separate any races, but it will probably, with more material available, possible to separate the examples from the South-East and Dammer Islands. Those from New Hanover require also attention.

Our material consists of the following specimens :—

2 without locality, purchased from Boucard.

1 said to be from Jobi, purchased from Boucard. This bird has no original label, but the preparation is that of Bruijn's hunters.

1 said to be from the Aru Islands, purchased from Whitely.

1 said to be from Cape York, purchased from Schneider.

♂ Waigin (from Bruijn's hunters).

♂ ♀ Dorey (W. Doherty coll.). "Iris and eyelids scarlet; feet blackish-brown; bill pea-green, darker on the culmen and tip."

2 New Hanover (C. Webster coll.).

♀ North Queensland (A. S. Meek coll.).

♀ Dammer Island in the Banda Sea (H. Kühn coll.).

1 ♂, 2 ♀ Koer Island (H. Kühn coll.).

2. *Amaurornis moluccana* Wall.

From the Moluccas over the Papuan Islands to Australia. We have a female shot by Anthony in the Kotoi district in British New Guinea.

1 from Halmahera.

1 from Sula Mangoli (Doherty).

2 Batjan.

2 from New Britain (Brown).

2 New Hanover (Webster).

1 from the Bellenden Ker Mountains in Queensland (Olive).

3. *Eulabeornis castaneiventris* Gould.

♀ ad. Wokan, Aru Islands (H. Kühn coll.), 6.10.1900. "Iris brownish-red, feet pale ochreous-yellow, bill bright yellowish-green with whitish tip."

It is by no means certain that the form from the Aru Islands is the same as that from Australia, nor that the one from Wokan is the same as those from other islands of the group. Without, however, examining a series from the various countries, it is not possible to determine whether certain differences in colouration are sexual, individual, or peculiar to specimens from certain localities only.

A series is much desired. Our specimen differs from those collected by Wallace and Cockerell, and now in the British Museum, in having the upperside quite rufous without any olive tinge whatever.

THE GENUS RALLICULA.

The three forms of this genus must be kept as separate species. *R. rubra* and *leucospila* occur together. *R. forbesi* seems to represent *leucospila*, but its sexual differentiation is different, and we know of no intermediate links.

4. *Rallicula rubra* Schleg.

Arfak.

We have 2 from Arfak (Bruijn coll.).

5. *Rallicula leucospila* (Salvad.).

Arfak to north coast.

We have a fine *male* and *female* from Mt. Maori, 3000 ft., near Humboldt Bay. This form extends most likely to Kaiser Wilhelm's Land.

6. *Rallicula forbesi* Sharpe.

South-Eastern New Guinea.

We have 12 specimens :—

- 3 ♀ Aroa River, 4000 to 7000 ft. (E. Weiske coll.).
- 2 ♂ between Rivers Laroki and Vanapa (E. Weiske coll.).
- 3 ♂, 1 ♀ Owen Stanley Mountains (native coll.).
- 1 ♂ “north coast of British New Guinea” (?) (Anthony coll.).
- 1 ♂ Mt. Scratchley (collector unknown).
- 1 ♂ Mt. Cameron (collector unknown).

7. *Porphyrio melanotus* Temm.

♂ ad. Trangan, Aru Islands. “Iris brownish-red, feet flesh-colour, frontal shield bright red, bill more of a blackish bluish-red.”

LIMICOLAE.

1. *Ochthodromus geoffroyi* (Wagl.).

One *female* was shot by Mr. Kühn on November 23rd on Mariri Island, Aru group. It has the wing (rather worn) about 147 mm. long.

We have before us 41 skins from various localities, but our series consists only of migrants, so that we cannot yet answer the question of the existence of a larger (eastern) and smaller (western) race.

2. *Aegialitis dubius* (Scop.).

One *female* sent by Dr. Erik Nyman from Stephansort in Kaiser Wilhelm's Land. It is a very dark and short-winged specimen.

We have before us not less than 71 specimens, but the series of birds from the breeding-places and collected during the nesting season is not rich, so that we are not ready to discuss the various subspecies that may possibly be comprised under the above name.

3. *Tringoides hypoleucus* (L.).

This bird frequents also the shores of the Papuan Islands, though we have only received it from Simbang in German New Guinea (Dr. E. Nyman coll. 31.8.1899), and from Mysol, where Kühn obtained it in January.

We have now 107 specimens of this ubiquitous bird before us.

4. *Limonites ruficollis* (Pall.).

One *male*, Simbang, 4.9.1899 (Erik Nyman coll.).

We have 43 specimens before us.

Mr. Albert Meek procured it for us on St. Aignan, Guillemard and Powell on Weeda Island, near Halmahera.

5. *Scolopax saturata* Horsf.

1 Arfak (Brnijn coll.).

1 probably Arfak (native coll.).

1 Moroka district, 3000 to 6000 ft. (purchased from Messrs. McIlwraith, McEacharn & Co., London).

♂ ♀ mountains of the Kotoi district, 11,000 ft., Owen Stanley Range (A. S. Anthony coll.). "Eyes brownish-black, bill brown, feet dark grey." The collector puts on one of the labels "winter height," probably meaning that the climate was very wintery at that altitude.

6. *Phalaropus lobatus* (L.) (1758).

Four specimens in pure grey-backed winter plumage were picked up at sea near the New Guinea coast on December 4th, 1899, by Mr. Kübu, when he sailed to Mysol.

VI. ALCEDINIDAE.

1. *Alcedo ispida ispidoidea* Less.

This form replaces *A. ispida floresiana* in the Moluccas and Papuan Islands. In addition to 39 skins from various Moluccan islands and from the Ionisiades, we have the following specimens from New Guinea and the Eastern Papuan Islands:—

1 ♀ Collingwood Bay (A. S. Meek coll.).

1 ♀ Milne Bay (A. S. Meek coll.).

1 ♂ Fergusson Island (A. S. Meek coll.).

2 ♂, 1 ♀ Woodlark Island (A. S. Meek coll.).

2 ♂ Duke of York Islands (Th. Kleinschmidt coll.).

1 said to be from New Ireland.

The specimens from Collingwood and Milne Bays, Fergusson and Woodlark Islands, seem on an average to be smaller than those from the Moluccas, South-East Islands, and the Bismarck Archipelago, but more material must be studied to confirm this; besides, there is some individual variation.

GENUS ALCYONE.

2. *Alcyone azurea azurea* (Lath.).

The typical *azurea* inhabits parts of Australia and Tasmania, but is replaced in Northern Queensland by *A. azurea pulchra*.

3. *Alcyone azurea pulchra* Gould.

Smaller and brighter in colour, especially the sides of the body more or less ultramarine. (See Nov. Zool. 1899, p. 427.) We have a fine series from Cape York, collected by A. S. Meek's men, and three collected by Mr. Olive on Mount Sapphiri, near Cairns, and on the Bellenden Ker Mountains.

4. *Alcyone azurea lessoni* Cassin.

This form seems to inhabit the whole of New Guinea with the adjacent Papuan Islands. It is most closely allied to *A. a. pulchra*, from which it differs merely by

its higher and stronger bill, and the want of the ultramarine wash along the sides of the body. The more or less developed white tip to the bill is probably a sign of age.

We have the following series :—

- 1 ♂ Mysol (H. Kühn coll.). “Iris coffee-brown. Feet bright coral-red. Bill black.”
- 3 Anday (from Bruijn’s collectors).
- 4 Kordo (from Bruijn’s collectors).
- 1 ♀ Dorey (Will. Doherty coll.).
- 1 ♂ Kapanur (Will. Doherty coll.).
- 1 near Port Moresby (E. Weiske coll.).
- 2 ♂ Fergusson Island (A. S. Meek coll.).
- 2 ♂, 2 ♀ Milne Bay (A. S. Meek coll.). “Iris dark brown. Feet yellowish-red. Bill black.”
- 1 ♀ Collingwood Bay (A. S. Meek coll.).

5. *Alcyone azurea affinis* Gray.

This form inhabits only the Northern Moluccas—Batjan, Halmahera, and also Morty. It differs from *A. a. lessoni* in having a conspicuous red (not whitish) tip to the bill of about a centimetre in length, in being slightly larger and deeper rusty chestnut on the chest, flanks, and under wing-coverts.

We have 4 specimens :—

- 2 Morty (J. Dumas coll.).
- 1 ♀ Batjan (Dr. Platen coll.). “Iris brown. Bill blackish with light red tip. Feet red.”
- 1 without locality.

6. *Alcyone websteri* Hart.

This remarkable species from New Hanover is figured in the *Ibis* for 1899, Pl. III. It is still unique in the Tring Museum. This bird is very much like *A. pusilla* in colouration, but of a paler blue, and about three times as large.

7. *Alcyone pusilla* (Temm.).

This bird is widely spread, namely, from Northern Queensland over New Guinea, and the adjacent islands to the Moluccas.

The bill varies much in size, but we cannot from our material localise these variations, though two specimens from Milne Bay have remarkably small bills.

We have the following specimens before us :—

- ♂ Weeda Island, near Gilolo (Dr. H. Guillemard coll.).
- 1 East end of Batanta (C. T. Kettlewell coll.).
- ♀ Toeal (H. Kühn coll.).
- 1 Dobbo, Aru Islands (Capt. C. Webster coll.).
- 3 ♀ Wokan, Aru Islands (H. Kühn coll.).
- ♂ ♀ Trangan, Aru Islands (H. Kühn coll.).
- 2 ♀ Milne Bay (A. S. Meek coll.).
- ♂ Cape York (A. S. Meek coll.).
- ♂ Hinchinbrook Island (collector unknown).
- ♂ Geraldton (A. S. Meek coll.).

8. *Ceyx solitaria* Temm.

We have the following skins :—

♀ Salwatty (Powell coll.). Bill from forehead 35.5 mm., wing 59 mm. Bill the largest of all, except the specimen from New Hanover.

1 ♂ Waigin (from Bruijn's hunters).

1 ♂ Kobroor, Aru Islands (H. Kühn coll.).

1 ♂ Trangan, Aru Islands (H. Kühn coll.).

1 ♂ Wokan, Aru Islands (H. Kühn coll.).

1 Mysol, Aru Islands (H. Kühn coll.).

1 Triton Bay, New Guinea (Capt. C. Webster coll.).

1 ♂ Ansus, Jobi (W. Doherty coll.).

2 ♂ Dorey (W. Doherty coll.).

1 ♀ Kapaur (W. Doherty coll.).

1 "Arfak Mountains" (purchased from Gerrard).

1 with a label in Arab characters (probably from Tana Mera?).

2 ♂ Simbang (E. Nyman coll.).

1 "Fly River" (?) (purchased from Whitely).

1 ♂ Koni District, British New Guinea (A. Anthony coll.).

2 Brown River (E. Weiske coll.).

1 ♂ Samarai (A. S. Meek coll.).

2 ♂, 2 ♀ Milne Bay (A. S. Meek coll.).

2 ♂ Fergusson Island (A. S. Meek coll.).

1 New Hanover (Capt. Cayley Webster coll.). Bill 36 mm., widest of all, rusty patches on lores bigger than in any other specimen, wing rather worn, at least 60 mm. Apparently a larger subspecies, but it would be too risky to bestow a name on this single specimen. The colours seem to be the same as those of typical *solitaria*, but this cannot be asserted with absolute certainty, as the specimen has been in spirits!

Syma torotoro Less.

This essentially Papuan kingfisher can be divided into a number of subspecies. Dr. Sharpe (*Cat. B. Brit. Mus.* XVII. pp. 196, 197) recognises two forms: *S. torotoro* in New Guinea, Aru, and the Western Papuan Islands, and *S. flavirostris* from North Queensland. Hartert separated the Aru form as *S. torotoro tentelare* (Nov. Zool. III. p. 534, 1896), and suspected a new subspecies in the bird from Fergusson (Nov. Zool. III. p. 244, 1896).

With the very large material recently received from Fergusson and other localities, we are now able not only to confirm the opinion about the Fergusson bird, but also to separate another form. We can thus recognise the following subspecies of *Syma torotoro* :—

9. *Syma torotoro torotoro* Less.

North-Western New Guinea, Mysol, Batanta, Waigin, Jobi to north coast, from Humboldt Bay to the Astrolabe Bay.—This distribution seems to us correct and natural. Our two certain Waigin skins, however, are deeper ochraceous below, and we have no series from the north coast: but only one skin from near Humboldt Bay, and one from Kaiser Wilhelm's Land belonging to this form. This last skin

is labelled "Simbang," but we are afraid the label is wrong, because we have from Simbang also three skins of our *Syma torotoro meeki*, a form which differs conspicuously. These skins are collected by the late Dr. Erik Nyman. They were packed in paper cylinders, on which the locality, date, and sex were written. These cylinders, however, slipped off sometimes, and an exchange between several of them might easily have happened before they reached the Tring Museum, where the writing on the cylinders was cut out and tied on to the legs. The practice of writing on the cylinders is a very bad one, and we know many instances of labels having been exchanged by that method. As Dr. Nyman collected as many birds on the shores of the Astrolabe Bay as he did on the Huon Gulf, and in view of the many striking differences between the ornith of these two districts, we believe that the questionable skin—which resembles most closely the specimen from Humboldt Bay, except in a rather long wing—came from Konstantinshafen or Stepbansort.

The underside of this form is pale ochraceous, darkest across the chest, paler on the throat and abdomen. Under wing-coverts pale ochraceous.

The type of *Syma torotoro* came from Dorey. We have the following skins of what we must now consider typical *torotoro* :—

♀ Andai (from Bruijn's hunters). Wing, 82 mm.

♀ Andai (from Bruijn's hunters). Wing, 80 mm.

♀ Mount Arfak (from Bruijn's hunters). Wing, 82 mm.

♂ Dorey (W. Doherty coll.). Wing, about 80 mm.

♀ Dorey (W. Doherty coll.). Wing, 81 mm.

"Iris very deep brown; feet ochreous; claws blackish above; bill pale orange-ochreous."

♂ Kapaur (W. Doherty coll.). Wing, 82 mm.

2 ♀ Marai, Jobi (W. Doherty). Wings, 81 to about 83 mm.

This Jobi specimen differs in no way from typical *torotoro*. Owing to the bad skinning of some of Doherty's birds, the wings are sometimes not well measurable.

♀ "Mt. Maori," near Humboldt Bay (Dumas coll.). Wings moulting.

♀ (?) Astrolabe Bay (E. Nyman coll.). Wing, 86 mm.

♂ Mysol (H. Kühn coll.). Wing, 77 mm.

♀ " " " " 78 mm.

♂ " " " " 81 mm.

♂ " " " " 77 mm.

♀ " " " " 81 mm.

"Iris dark coffee-brown; feet and bill bright chromeous."

♂ Salwatty (Powell coll.). Wing, 82 mm.

♀ Waigiu (Guillemard coll.). Wing, 86 mm.

♀ Waigin (Guillemard coll.). Wing short; but this *female* is a very young bird, with the upper bill mostly brownish-black, and the black patch on the crown only indicated.

♂ "Waigin, mars 84" (probably from Bruijn's hunters). Wing, 81 mm.

8 without localities (evidently mostly from Bruijn's hunters). Wings, 80 to 86 mm.

10. *Syma tortoro tentelare* Hart.

Ann Islands only! Most closely allied to *S. torotoro torotoro* in colouration; but the black patch on the ptilium of the *female*, which in *S. torotoro torotoro* quite or nearly reaches the base of the culmen, does not extend nearer to the bill than

a centimetre or more above the bill. It is also generally less large than in *S. torotoro torotoro*. The wing of *S. torotoro tentelare* is as a rule shorter.

We have the following examples of this form :—

♂ Wanambai, Aru Islands (C. Webster coll.). Wing, 77 mm.

♀ Wanambai, Aru Islands (C. Webster coll.). Wing, 80 mm. (Type of this subspecies).

♀ Kobroor (H. Kühn coll.). Wing, 74 mm. "Iris dark brown; feet and bill chromeons."

♀ Kobroor (H. Kühn coll.). Wing, 76 mm.

♀ Kobroor (H. Kühn coll.). Wing, 77 mm.

♀ Wanambai (H. Kühn coll.). Wing, 74 mm.

♂ Kobroor (H. Kühn coll.). Wing, 76 mm. (Cf. Salvadori, *Orn. Pap.* 1. p. 485; Hartert, Nov. Zool. 1896, p. 534.)

11. *Syma torotoro meeki* subsp. nov.

This new form differs at a glance from *S. torotoro torotoro* and *tentelare* by its small size, especially smaller bill and wings and its paler upper and under surfaces. There is a distinct ochreous area across the chest, the abdomen is paler, the throat white. The black patch on the crown of the *female* is still farther away from the base of the culmen than in *tentelare*, namely about 10 to 18 mm., and generally very small. Count Salvadori (*Orn. Pap.* 1. p. 485) had already noticed the position of the black patch in the *females* from Naiabui, but he had not commented on the other differences from *torotoro*. In our series of 15 individuals of this form is one in which the tip of the culmen is black for about 15 mm., while all the other 14 have the bill entirely yellow. The one specimen with the black tip of the culmen is evidently somewhat immature, the black crown-patch being tinged with green and somewhat irregular in shape. There is also a large white, black-tipped nuchal patch. There is no doubt that young birds of all these forms have the bill more or less black, and the white nuchal patch is also more or less a sign of immaturity.

We have the following specimens of *S. t. meeki* :—

♀ Milne Bay (A. S. Meek coll.). "Iris dark brown; bill and feet orange."

Type of this subspecies. Wing, 76 mm.

♀ Milne Bay (A. S. Meek coll.). Wing, 74 mm.

♀ Milne Bay (A. S. Meek coll.). Wing, 73 mm.

♂ Milne Bay (A. S. Meek coll.). Wing, 73 mm.

♂ Milne Bay (A. S. Meek coll.). Wing, 74 mm.

♀ Low country near Port Moresby (E. Weiske coll.). Wing, 74 mm.

♂ Brown River (E. Weiske coll.). Wing, 74 mm.

♂ Upper Moriari River, Owen Stanley Mountains (purchased from dealer).

Wing moulting.

♂ British New Guinea (A. Goldie coll.). Wing, 76 mm.

♂ Naiabui (D'Albertis coll.). Wing, 77 mm.

♀ Simbang (E. Nyman coll.). Wing, 78 mm.

♀ Simbang (E. Nyman coll.). Wing, 78 mm.

♂ Simbang (E. Nyman coll.). Wing, 76 mm.

The distribution of *S. t. meeki* would thus be from the Huon Gulf along the

coast round the East Cape, and on the south coast to the Brown River. This form is named in honour of Mr. Albert S. Meek, to whose energy the richness of our series of *Syma* is chiefly due.

12. *Syma torotoro flavirostris* Gould.

Agrees in its pale colouration above and below with *S. torotoro meeki*, but differs in the foremost half of the culmen being black and in the extent of the black patch on the crown. This latter extends nearly to the base of the culmen, and is apparently wider in extent. The black on the culmen is evidently never quite absent in Australian specimens.

At present we have the following *flavirostris* :—

♂ Cape York (collector unknown). Wing, 77.5 mm.

♂ without exact locality, from the Marshall collection, named "*Syma flavirostris*." Wing, 76 mm.

♂ Somerset (D'Albertis e Tomasinelli coll.). Wing, 75 mm.

♀ Cape York (A. S. Meek coll.). Wing, 78 mm. "Iris dark brown, feet pale cadmium, bill pale cadmium" (Eichhorn).

♀ Cape York (A. S. Meek coll.). Wing, 75 mm.

♀ " " " " 77 mm.

♂ " " " " 76.5 mm.

♀ " " " " 75 mm.

♂ Somerset (D'Albertis e Tomasinelli coll.). Wing, 76 mm. Nearly the whole upper bill black, white nuchal patch very large.

♀ juv. without label, but evidently from Australia. Entire upper and under bill black, entire crown from forehead to nape black with a faint greenish gloss on the forehead, leaving the lores and a wide superciliary line ochraceous; feathers of cheeks and sides of breast narrowly fringed with black; large white nuchal patch.

S. t. flavirostris seems to inhabit the Cape York Peninsula only!

13. *Syma torotoro ochracea* subsp. nov.

Inhabits the D'Entrecasteaux group, namely, Fergusson and Goodenough Islands. Characterised by its uniform ochraceous undersurface, which is only somewhat paler on the upper throat, but not white! Bill rather wide and fairly long, yellow without black in the adult bird. Wing rather long. The black patch on the crown extends nearly or quite to the base of the culmen.

There is a wide difference between this form and *meeki* or *flavirostris*, but typical *torotoro* and *tentelare* bridge the chasm over. In *ochracea* there is no distinct darker area across the chest, the abdomen is as dark as the breast, and the throat is pale ochraceous, not at all white. The under wing-coverts are also darker ochraceous than in any of the other forms. In *flavirostris* and *meeki* they are nearly white. The bill is 6 to 10 mm. longer than in *S. t. meeki* and *flavirostris*.

We have the following specimens of *S. t. ochracea*, all collected by Albert S. Meek and his assistants :—

♂ Goodenough Island, 9.12.1896. Wing, 83 mm. Type of this subspecies. "Iris dark brown, feet and bill orange."

♀ Goodenough Island. Wing, 81 mm.

♀ " " " 82 mm.

♂ " " " 82 mm.

♀	Fergusson Island.	Wing, 84 mm.
♀	”	” 82 mm.
♂	”	” 83 mm.
♀	”	” 82 mm.
♂	”	” 83 mm.
♂	”	” 83 mm.
♂	”	” 84 mm.
♀	”	” 81 mm.
♂	”	” 84 mm.
♀	”	” 82.5 mm.
♀	”	” 83 mm.
♂	”	” 84 mm.

14. *Syma megarhyncha* Salvad.

In *Ann. Mus. Civ. Genova* 1896, p. 70, Count Salvadori described this large *Syma* for the first time. The type is a *male*. We have received a *female* (marked *female* by its ignorant collector) shot in the Kotoi district, 5000 feet high, in August 1898, by Mr. Anthony. The iris is marked as dark brown, bill yellow (though the upper bill has a black tip for nearly 2 cm.), feet yellow. We have two *females*, one from British New Guinea, without exact locality, purchased long ago from a dealer, and another from Mt. Scratchley, and we have seen another in the British Museum. The *females* have the crown black, younger individuals the upper bill entirely black, older ones only a black line along the culmen. Older individuals have no white nuchal patch, younger ones a large one. Prof. Reichenow has described an adult *female* as *Syma weiskei* (*Orn. Monatsber.* 1900, p. 186). We have examined his type, which is now in the British Museum. There is no doubt that *Syma weiskei* is the *female* of *megarhyncha*, although the type has erroneously been marked “♂” by the collector. Having examined over a hundred and fifty examples of *Syma*, we have enough experience to tell at a glance whether any known *Syma* is a *male* or a *female*. The “manche Färbungseigenthümlichkeiten,” which, as Prof. Reichenow thinks, show that it is a distinct species and not the *female* of *S. megarhyncha*, are those separating the sexes in this genus. About the white nuchal patch see under No. 11, *Syma torotoro macki*.

Melidora macrorhina (Less.).

Messrs. Salvadori (*Orn. Pap.* I. pp. 500 to 502), and Sharpe (*Cat. B. Brit Mus.* XVII. pp. 201 to 203), distinguish two so-called species, one from New Guinea, Salwatty, Waigin and Mysol—i.e. *M. macrorhina*—and another from Jobi, *M. jobiensis*, of which no specimens seem to be known except the two *female* types in Italy. The latter are distinguished from *M. macrorhina* only by the want of the olive-ochreous margins to the feathers of the crown. If this form is distinct it is merely a representative subspecies, and extends from Jobi along the north coast to the Astrolabe Bay in Kaiser Wilhelm’s Laud, as shown by 2 *females* from Konstantinshafen, which lack the olive-ochreous tips to the feathers of the crown, and which we therefore take to be *jobiensis*. It is, however, interesting to note that we have a *male* from “Mt. Maori, 3000 ft., near Humboldt Bay,” collected in January 1899 by J. M. Dumas, which does not seem to differ in any way from *males* of *macrorhina* from the Berau Peninsula and South-Eastern New Guinea. We also have a *female* collected somewhere in German New Guinea by Captains Cotton and Webster,

which shows the olive-ochreous tips to the feathers of the crown well ; but it is probably from the shores of the Huon Gulf, where more specimens of birds were collected by these gentlemen than on the Astrolabe Bay.

We have a specimen, with a very uniform rufous ochre underside, from Arfak. This would be a young bird, but it has not dusky fringes to all the feathers below, those of the abdomen having faint whitish tips. A young bird from Mysol, however, only about three-fourths grown, has the underside to the breast rufous-ochreous with dusky fringes, but the abdomen whitish. What stage, then, is the Arfak bird mentioned just now, or is it another form ?

As it is, we must for the present accept two subspecies :—

15. *Melidora macrorhina macrorhina* (Less.).

Greater part of New Guinea, Salwatty, Waigiu, Mysol. Of this we have :—

1 ♂, 2 ♀ Brown River (E. Weiske coll.).

2 ♀ between Rivers Laroki and Vanapa (nat. coll.).

♀ juv. Upper Moriari River, British New Guinea, 500 to 2500 ft. (This bird is also dark ochreous-rufous below with dusky fringes, but the brown is not of the same shade as in the bird from Arfak mentioned above, and some sprouting feathers show that it is assuming the white underside of the adult birds.)

♀ German New Guinea (Cpts. Cotton & Webster coll.).

♀ (marked ♂) Simbang (E. Nyman coll.).

2 ♀ Dorey (typical locality) (W. Doherty coll.).

♀ juv. Dorey (Guillemard coll.).

2 ♂ Arfak (from Bruijn's hunters).

♀ Arfak (from Bruijn's hunters). (Brown below ! see above).

♂ 2 juv. (pull.) Mysol (H. Kühn coll.).

16. *Melidora macrorhina jobiensis* (Salvad.).

2 ♀ Konstantinhafen (J. Kuby coll.).

♂ ad. Mt. Maori, near Humboldt Bay (J. M. Dumas coll.). (This is supposed to be the indistinguishable *male* of *jobiensis* merely on account of the locality, where it was shot. This form *jobiensis* requires more study.)

17. *Clytoceyx rex* Sharpe.

This extraordinary bird is said, in the *Cat. B. Brit. Mus.* XVII. p. 203, 1892, to be "confined to South-Eastern New Guinea." This is, however, not the case, for it extends northwards to Northern Kaiser Wilhelm's Land, and probably from there along the north coast to the Ambernoh River. We have the following specimens :—

♂ ♀ without definite localities (bought from A. Boucard).

♂ British New Guinea (A. Goldie coll.).

♀ Mt. Cameron, 5000 to 6000 ft. (bought from Mellwraith & Co.).

2 ♂ Mt. Cameron, 3000 and 6500 ft., Owen Stanley Range (S. Anthony coll.).

♀ juv. Samarai, British New Guinea (A. S. Meek coll.). "Iris dark brown ; feet brownish flesh-colour ; bill dark brown, lower part brownish-yellow."

♀ juv., 2 ♂ fere ad. Milne Bay (A. S. Meek coll.). "Iris dark brown ; feet light greenish slate-colour ; bill as above."

2 ♂ Konstantinhafen, Astrolabe Bay (J. Kuby coll.).

1 ♀ labelled as follows :—"Genus *alcedo* nov. spec. *Cyclotyx rex* Sharpe (sic) ♂ (sic). Nouv. Guinée."

This skin is in the typical preparation of the Dutch New Guinea bird-hunters, and agrees most with skins from Tana Mera on the north coast. As these hunters never collect in the British or German possessions, we have little doubt that this bird came from the north coast between the Amberoh River and Humboldt Bay.

18. *Dacelo leachii intermedia* Salvad.

Of this form, which is very close to *D. l. cervina*, we have only one female, collected by Lix at Nicura in Southern British New Guinea. It is almost devoid of dark bars below, very dark brown on the back, and bright pale blue on the rump and wing coverts. The longitudinal blackish streaks on the pileum are very broad and conspicuous. The bill in this specimen is gigantic and bigger than in any of our Australian specimens, and than the measurements of the specimens in the British Museum. The culmen from the forehead is 86 mm. long, while Dr. Sharpe gives only 77 mm.

19. *Sauromarptis gaudichaud* (Quoy et Gaim.).

Cf. Nov. Zool. III. (1896) pp. 17, 535.

This remarkable Kingfisher is evidently very common all over New Guinea. We have now before us a good series of 88 skins. We have tried very hard to separate them into local forms, but without success. We have come to the following conclusions :—

1. The contentions of Dr. Sharpe that the adult male has a blue tail, the female a chestnut rufous tail, are quite correct. Although Count Salvadori had before him a larger series (98 specimens), when he wrote his *Orn. Pap.*, a great number of his specimens were sexed by Bruijn's native hunters, who are not reliable with regard to the determination of the sex—a thing in which, unfortunately, even many European collectors are unreliable.

2. The young birds differ from the adults in having the upper bill black, the collar and sides of the neck darker rusty buff, the blue on the wings a shade paler. The young female has the tail chestnut rufous like the adult female, but the young male has the tail blue at base, more or less widely tipped with chestnut. The dusky margins to the feathers of the hindneck and chest are not evident on all young birds. Although conspicuous in all the rest, they are absent in the youngest of all.

3. We have observed the following variations, none of which appears to be sufficiently localised to justify the separation of subspecies.

The bill varies much in size. The majority of the Aru birds have rather large bills, but some of them have very small ones, while the largest bill in our series is that of a Ron Island male.

The white patch behind the eye varies much in extent ; sometimes it is almost concealed, sometimes well developed. The white spots on the nape also are sometimes quite obsolete, sometimes very conspicuous.

The whitish collar is sometimes pure white, sometimes rather dark rusty buff. The latter tint is as a rule due to immaturity, but it is also conspicuous in some old birds in fresh plumage.

There is sometimes a shade or some very small spots of blue behind the eye,

but in one male from Waigin, and in two from the Aru Islands, there is a broad blue streak behind the eyes, and in one of the last two a blue broken line encircles the crown behind.

The blue on the wings varies in extent.

The light blue of the back and rump varies in shade. It is sometimes deeper, sometimes lighter. In many of the specimens from German and British New Guinea, and from Aru, it is lighter, but the percentage is not sufficient to say that this is anything like a local character.

There is in the majority of specimens from the eastern parts of New Guinea and from the Aru Islands a very conspicuous (though concealed when the wings are shut) white patch on the upper back, but this is sometimes wanting in specimens from the same countries, and equally developed in others from North-Western New Guinea and the Western Papuan Islands.

We are thus not able to recognise Meyer's *aruensis* and *kubaryi*.

Our material is as follows :—

- * 5 ♂ Waigin (Guillemard and Powell coll.).
- 3 ♀ Waigin (Guillemard and Powell coll.).
- ♂ juv. Batanta (Guillemard coll.).
- ♀ ad. Batanta (Guillemard coll.).
- 2 ♂, 2 ♀ Mysol (Guillemard coll.).
- 1 ♂ Mysol (Wallace coll.).
- 4 ♂ ad., 1 ♂ juv., 1 ♀ juv. Mysol (H. Kühn coll.).
- 2 Wanambai, Aru Islands (Capt. C. Webster coll.).
- 1 Mikroor, Aru Islands (Capt. C. Webster coll.).
- 1 ♂ Vokan, Aru (Beccari coll.).
- 1 ♂ juv. Giabu-lengan, Aru (Beccari coll.).
- 2 ♀ Dobbo, Aru Islands (H. Kühn coll.).
- 2 ♂ Trangan, Aru Islands (H. Kühn coll.).
- 2 ♂ ♀ Kobroor, Aru Islands (H. Kühn coll.).
- ♂ Marai, Jobi (W. Doherty coll.).
- ♀ Ansnis, Jobi (W. Doherty coll.).
- 2 ♂ ad., 2 ♀ ad., 1 ♂ juv. Ron Island (W. Doherty coll.).
- 2 ♂, 2 ♀ Dorey (W. Doherty coll.).
- ♂ Tana Mera, N. coast of New Guinea (W. Doherty coll.).
- ♂ ♀ Takar (W. Doherty coll.).
- 4 ♂ ad., 4 ♀, ad. 1 juv. Kapaur (W. Doherty coll.).
- ♀ Fly River (D'Albertis coll.).
- ♂ Naiabui (D'Albertis coll.).
- 1 Nicura (Lix coll.).
- 4 Brown River (E. Weiske coll.).
- 1 ♂ Mailu district (Anthony coll.).
- 2 West of Port Moresby (Anthony coll.).
- 3 ♂, 2 ♀ Collingwood Bay (A. S. Meek coll.).
- 2 ♂, 1 ♀ Milne Bay (A. S. Meek coll.).
- 1 ♂ juv. Cape Vogel, N.E. coast (A. S. Meek coll.).
- 2 British New Guinea (Goldie coll.).
- ♂ Konstantinshafen (Kubary coll.).

* The sex is only stated where the collector has marked it on the original label. In all cases those marked ♂ have blue tails, those marked ♀ chestnut tails.

2 Konstantinhafen (Kubary coll.)

1 ♂ ad., 1 ♂ juv., 1 ♀ Stephansort (E. Nyman coll.).

♂ ♀ Simbang (E. Nyman coll.).

20. *Sauromarptis tyro* Gray.

Evidently restricted to the Aru group of islands. We have received six skins collected at Dobbo, Wanambai, and on Trangan, Aru Islands, by H. Kühn and C. Webster. Kühn describes the iris as coffee-brown; feet dirty greenish-white; the upper bill black, lower bill whitish "colourless."

21. *Halcyon macleayi* Jard. & Selby.

The distribution of this bird is from Northern Australia to South-Eastern New Guinea, and we have also now received it from the Key Islands, where its occurrence is rather unexpected. The *female* differs from the *male* in wanting the white collar round the hindneck. Young birds have the collar above and the white loreal patches more or less rusty, blackish borders to the feathers of the breast, and the feathers of the upperside with rusty margins. The flanks are either pure white or more or less tinged with rust-colour. We are not sure that the amount of rust-colour on the flanks is always a sign of immaturity, as it seems to occur also in apparently adult individuals.

We have before us the following specimens of typical *macleayi* :—

3 ♀ North Queensland (A. S. Meek coll.).

3 "Queensland."

2 ♀ Cooktown, Queensland (Olive coll.) (ex Robinson).

2 ♂ ad., 2 ♀ ad., 1 ♂ juv. Cape York (A. S. Meek's assistant coll.).

♂ Naiabui, Southern New Guinea (D'Albertis coll.).

♂ ♀ Ibrah, Little Key group, 10.5.1900. "Iris dark coffee-brown, feet black, bill black, mandible with white base."

2 ♂, 2 ♀ St. Aignan, Lonisiades (A. S. Meek coll.).

3 ♂, 1 ♀ Fergusson, D'Entrecasteaux group (A. S. Meek coll.).

♀ Trobriand Islands (A. S. Meek coll.).

1 Woodlark Island (A. S. Meek coll.).

♀ Collingwood Bay (A. S. Meek coll.)

2 ♀ Simbang, Huon Gulf (Erik Nyman coll.).

22. *Halcyon elisabeth* (Heine).

This rare bird is probably a northern representative of *macleayi*. It agrees with the latter in the differences between the sexes and the white base of the lower bill, as well as in the general colouration. It differs in being larger, in having the upperside all blue, not merging into greenish cobalt, and the white occipital patch apparently more concealed. *H. elisabeth* stands here with a binomial name as a species, as, according to Madarasz (*Term. Füzetek* 1899, pp. 408, 409), both *macleayi* and *elisabeth* were obtained at Erima by L. Biro.

This rare form is only known from Kaiser Wilhelm's Land, and we are inclined to think that it does represent *macleayi* there during the breeding time, notwithstanding the occurrence of both at Erima, and that it will ultimately rank as a subspecies of *macleayi*. It was originally described without definite locality (see Heine, *J.f.O.*

1883, p. 222 ; Salvad., *Orn. Pap. Aggiunte* I. p. 56 ; Berlepsch, *J.f.O.* 1897, p. 90 Madarasz, *Term. Füzetek* 1899, p. 409, Pl. XVII., ♂). This bird is not mentioned in the *Catalogue of Birds* ; but see Sharpe's *Hand List* II. p. 58.

We have before us two *females* collected by Kubary at Konstantinshafen, received from Comte Berlepsch.

23. *Halcyon diops* (Temm.).

This very distinct species inhabits the Northern Moluccas from Morty to Obi.

We have before us 35 specimens from Morty (J. Dumas coll.), Batjan (Doherty, Guillemard), Ternate (Doherty, Powell), Halmahera (Bruijn), and Obi (Doherty).

24. *Halcyon nigrocyanea* Wall.

In addition to four without labels (bought from plumassiers), we have :—

♂ ad. Etua Bay (Capt. C. Webster coll.).

♀ ad. Anday (Bruijn coll.).

1 juv. Arfak (Bruijn coll.).

1 Jobi Island (purchased by Guillemard).

If *H. quadricolor* Onst., from the north coast to Kaiser Wilhelm's Land (cf. Berlepsch, *J.f.O.* 1897, p. 90), is really different, it will have to rank as a subspecies of *nigrocyanea*, the *females* of the two forms being apparently almost alike, and the adult *male* of *quadricolor* very similar to the young of *nigrocyanea*.

25. *Halcyon stictolaema* (Salvad.).

This rare species is so far apparently only known from the Fly River.

We have one obtained by A. S. Anthony, about 2000 ft. high, on Mt. Cameron, Owen Stanley Range, August 20th, 1896.

26. *Halcyon sancta* Vig. & Horsf.

In addition to 56 specimens from outside the Papuan region, coming from Bali (Doherty), Lombok (Everett), Sumbawa (Doherty), Savu (Everett), South Flores (Everett), Timor (Everett), Alor (Everett), Batjan (Doherty), Ternate (Guillemard, Powell), Burn (Dumas), Halmahera (Guillemard), Talaut Islands, Banggai, Sanghi, Siao, Sula Islands (Doherty), Key Islands (Kühn), Goram Islands (Kühn), Teoor (Kühn), Kisoie (Kühn), Solomon Islands (Webster & Ribbe), Australia (Queensland: Meek, Olive ; Victoria: Billinghamurst), we have the following individuals from the Papuan region :—

1 Salwatty (native coll.).

1 Waigi (from Bruijn's hunters).

1 ♂ Wokan, Aru Islands (Kühn coll.).

1 ♀ Dorey (W. Doherty coll.).

1 ♀ Mafor (W. Doherty coll.).

1 ♀ Korido (Beccari coll.).

1 ♂ Auday (Beccari coll.).

1 ♂ Mansinam (Bruijn coll.).

1 ♀ Ansus, Jobi (W. Doherty coll.).

1 ♂ Marai, Jobi (W. Doherty coll.).

- 1 ♂ Punalu or Bras, Mapia or St. David's group, north of the Berau Peninsula (W. Doherty coll.).
 1 ♀ Pigen, Mapia or St. David's group (W. Doherty coll.).
 3 ♂, 2 ♀ Simbang, Kaiser Wilhelm's Land (E. Nyman coll.).
 1 ♀ Milne Bay (A. S. Meek coll.).
 1 ♂, 1 ♀ Trobriand Islands (A. S. Meek coll.).
 1 ♂, 1 ♀ Fergusson Island (A. S. Meek coll.).
 2 ♂, 4 ♀ Sudest Island (A. S. Meek coll.).
 3 ♀ Rossel Island (A. S. Meek coll.).
 4 ♂, 2 ♀ St. Aignan (A. S. Meek coll.).
 4 ♂, 4 ♀ Woodlark Island (A. S. Meek coll.).
 1 ♂, 4 ♀ Duke of York Island (Th. Kleinschmidt coll.).
 1 Ralmm, New Britain (C. Webster coll.).
 1 New Ireland (collector unknown).

27. *Halcyon sordidus sordidus* Gould.

This species is easily divisible into two races. The large one has a very strange distribution, being found on the Arn Islands in the west and in Queensland in the east, and has never been found in New Guinea, while in Egum and the Lonisiades it is replaced by a very much smaller form.

We have the following seven specimens of the large *sordidus* :—

- 1 without label. Wing, 113 mm. ; culmen, 58 mm.
 1 ♀ mouth of Mulgrave River, four miles below the Bellenden Ker Range (Olive coll.) (ex Robinson). Wing, 114 mm. ; culmen, 55 mm.
 1 ♀ Wokan, Aru (H. Kühn coll.). Wing, 105 mm. ; culmen, 52 mm.
 1 ♂ Barkai Island, Aru (H. Kühn coll.). Wing, 110 mm. ; culmen, 57 mm.
 1 ♂ Dobbo, Aru (H. Kühn coll.). Wing, 112 mm. ; culmen, 54 mm.
 1 Dobbo, Aru (Capt. Caley Webster coll.). Wing, 116 mm. ; culmen, 53 mm.
 1 said to be Aru Islands (bought from H. Whitley). Wing, 109 mm. ; culmen 57 mm.

28. *Halcyon sordidus colonus* Hart.

- ♂ ♀ Egum Island (A. S. Meek coll.) (♂ type of *colonus*). Wings, 93, 95 mm. ; culmen, 44, 42 mm.
 ♂ St. Aignan (A. S. Meek coll.). Wing, 91 mm. ; culmen, 46 mm.
 ♂ " " " " 93 " " 47 "
 ♂ " " " " 90 " " 44 "
 ♂ " " " " 90 " " 45 "
 ♂ (juv.!) St. Aignan (A. S. Meek coll.). Wing, 88 mm. ; culmen, 37 mm.
 ♀ St. Aignan (A. S. Meek coll.). Wing, 92 mm. ; culmen, 43 mm.
 ♀ " " " " 93 " " 44 "
 ♀ (juv.) St. Aignan (A. S. Meek coll.). Wing, 87 mm. ; culmen, 44 mm.
 ♂ Rossel Island (A. S. Meek coll.). Wing, 86 mm. ; culmen, 45 mm.

29. *Halcyon saurophaga* Gould.

Spread from the Moluccas over New Guinea to the Solomon Islands. We have not been able to make out any local races. Our material consists of the following 29 specimens :—

- 1 "Halmahera" (bought from Boucard).
- 1 ♂, 2 ♀ Batjan (W. Doherty coll.).
- 2 Morty (J. Dumas coll.).
- 2 Weeda Islands, near Gilolo (H. Guillemard coll.).
- 1 ♂ juv. Mysol (H. Guillemard coll.).
- 1 ♂ ad. Mysol (H. Guillemard coll.).
- 1 ♂ ad. Efbe Islands, near Mysol (H. Guillemard coll.).
- 1 ♀ Jobi (from Bruijn's hunters).
- 2 ♂ Ansus, Jobi (W. Doherty coll.).
- 1 ♀ Dorey (Powell coll.).
- 2 ♂ Yamna (W. Doherty coll.).
- 3 ♂, 3 ♀ St. Aignan, Louisiades (A. S. Meek coll.).
- 2 ♂ ♀ Egum group, East Papuan Islands (A. S. Meek coll.).
- 1 said to be from New Ireland.
- 1 Rnbiana, Solomons (C. M. Woodford coll.).
- 1 Munia, Shortland group (Wahnes & Ribbe coll.).

THE GENUS TANYSIPTERA.

In examining the specimens of this genus from our region we found so many connecting links, and so many characters in common with the few species that occur outside the Papuan area, that we prefer to give a short review of the whole genus.

There have been described as distinct species 21 forms, of which we are unable to recognise *Tanysiptera microrhyncha* Sharpe, and *T. galatea rubiensis* A. B. Meyer, thus leaving 19 forms, which we consider to form seven species, of which *T. dea* has ten subspecies, *T. sabrina* three, and *T. sylvia* two.

30. *Tanysiptera nympha* Gray.

This and *T. danae* have the under-surface vermilion. *T. nympha* has the pileum blue, sides of head and mantle black. It inhabits North-Western New Guinea.

We have five unlabelled skins, collected by natives, purchased from Mr. van Renesse van Duivenbode, two of which are said to come from Sorong, two from Afak, and one fine adult bird collected by Captain Webster at Etna Bay.

31. *Tanysiptera danae* Sharpe.

Differs widely from *T. nympha* in its ochreous brown crown and mantle, and cinnamon sides of head. It evidently replaces *T. nympha* in South-Eastern New Guinea, but must be regarded as a different species, as there are, to our knowledge, no intermediate forms, or any traces of such known.

We have the following specimens :—

4 ad., 1 juv. "British New Guinea," without locality.

1 ad. Eafa district (bought from McIlwraith and McEacharn).

1 ad. Aroa River (Emil Weiske coll.).

1 juv., 2 ad. "near Port Moresby" (bought from McIlwraith and McEacharn).

2 ♂ ad., 1 ♀ ad., 1 ♀ juv. Milne Bay (A. S. Meek coll). "Iris dark brown ; feet dirty red ; bill dark red."

1 ♂ ad. Samarai (A. S. Meek coll.).

32. *Tanysiptera sylvia sylvia* Gould.

Restricted to N. E. Australia. The species *T. sylvia* differs from all the rest by its cinnamon under-surface, and has a white patch on the mantle like *T. sabrina*. The bill is in this form slightly turned upward. This seems to be less the case in *salvadoriana*, judging from our scanty material.

We have 14 specimens of the typical *sylvia*, namely :—

7 without definite localities, bought as "Australian" in a London sale-room.

1 ad. Somerset, Cape York (J. F. Cockerell and Thorpe coll.).

2 ad., 1 immature, Somerset, Cape York (D'Albertis and Tomasinelli coll.).

♀ ad. Cedar Bay, Queensland (A. S. Meek coll.).

2 ♀ ad. Bellenden Ker Mountains, near Cairns (Olive coll.).

33. *Tanysiptera sylvia salvadoriana* Rams.

Replaces *T. sylvia sylvia* in South-Eastern New Guinea. It differs from the former by its more uniform, lighter and more cobalt-blue pileum and wings and somewhat paler cinnamon under-surface. It is not a common bird, and we have only four specimens :—

Two without definite localities, one (or both?) apparently from Goldie's collections.

1 ♂ ad. Mt. Cameron, Owen Stanley Range (A. S. Anthony coll.).

1 fere ad. Aroa River (Emil Weiske coll.).

34. *Tanysiptera nigriceps* ScL.

Nearest allied to *T. sylvia*, of which it might be a subspecies, differing only in its black (instead of blue) crown of head and scapulars, and rather pale underside. It is described as coming from the Duke of York Island. We have only one bad skin, said to be from New Ireland.

35. *Tanysiptera sabrina sabrina* Gray.

This bird is, as far as we know, confined to the small Moluccan island of Kaioa. We have no specimen of it.

36. *Tanysiptera sabrina emiliae* Sharpe.

Differs from the typical *sabrina* in having a paler blue crown, narrow blue borders to the rectrices, and a more blue hindneck. Known from the island of

Raon, or Rau, between Morty and the north point of Halmahera. We have no specimen of this either.

37. *Tanysiptera sabrina doris* Wall.

Differs from the other two forms of *T. sabrina* by its almost entirely blue tail, brownish-black wings and scapulars, and the blue-black hindneck. The colour of the crown appears to be intermediate between that of the other two forms. *T. s. doris* inhabits Morty, the northernmost island of the Moluccas.

We have the following six specimens :—

4 adults (Dumas coll.).

1 juv. (Dumas coll.).

1 adult (Wallace coll.).

The reason for which we have separated the three forms of *T. sabrina* from the *T. dea* group of forms, is the conspicuous white upper back found in all three. Professor Schlegel, it is true, asserted that among his 16 specimens of *T. sabrina sabrina* there were some which showed little trace of this white patch, and one where it was entirely absent. These, however, have been examined by Dr. Sharpe; and the specimen in which the white patch was quite absent, was found to have had the feathers of the middle back wholly removed, either by shot or otherwise; those with only traces of the white are young birds. Our young bird of *doris* has no white upper back, but a patch of buff spots.

38. *Tanysiptera dea dea* (L.).

This form is found on Amboina and Ceram, and on some of the South-East Islands. It is characterised by the blue hind-neck and back, formed by the tips of the feathers, of which the basal two-thirds are of a blackish blue.

We have the following 11 specimens :—

1 Amboina, 1883 (from Dr. Guillemard's coll.).

5 ♂, 2 ♀ ad. Manawoka, Goram Group (H. Kühn coll.).

2 ♂ jun. underside buff, Goram Island (H. Kühn coll.).

1 sex doubtful, Manawoka (H. Kühn coll.).

Mr. Kühn describes the iris as dark coffee-brown, the feet as ochreous (appear black in skin), the bill as coral-red.

39. *Tanysiptera dea riedeli* Verr.

This lovely form is evidently the nearest in colouration to *T. dea dea*, although its "habitat" is far away from that of the latter. It inhabits the Schouten Islands in Geelvink Bay. The chief difference is that the crown, nape, hindneck and upper back are all of a beautiful, very light, almost silvery blue, the basal two-thirds of these feathers being blackish blue. This silvery blue colour extends also on to the wing-coverts. The remainder of the upperside is brighter blue than in *dea*.

We have 8 specimens, namely, 4 ♂, 3 ♀, from Biak (W. Doherty coll.), and 1 ♂ from Korrido (W. Doherty coll.). "Iris deep brown; feet pale brownish; claws darker; bill scarlet.

40. *Tanyiptera dea ellioti* Sharpe.

Differs from *T. dea dea* and *T. dea riedeli* by the absence of the pale apices to the feathers of the mantle, which in this and all the following subspecies of *T. dea* is uniform dark blue or black.

T. dea ellioti differs from all other forms of *T. dea* in having the elongated portion of the central rectrices much broader and much less developed spatulae. The rest of the tail is also proportionately longer, which character it shares with *rosseliana*. The perfectly adult *male* seems to have a pure white tail. This form also differs from *rosseliana* by the much paler crown. The tail of the young is blue in both *ellioti* and *rosseliana*.

Inhabits the island of Koffiwo, near Mysol. It was formerly erroneously said to come from Mysol, but it appears to be a fact that no species of *Tanyiptera* occurs on that island, which circumstance is also confirmed by the absence of any *Tanyiptera* in the large collection Mr. Kühn sent from Mysol. We have at present no specimen of *ellioti*.

41. *Tanyiptera dea rosseliana* Tristr.

This beautiful form, when adult, has the tail entirely white with the exception of the attenuated portion of the central rectrices. It differs from all others in the intense deep blue of the whole upper surface, which is palest and brightest on the crown and upper wing-coverts. It occurs on the island of Rossel, in the Louisiades, whence Mr. Albert Meek sent us seven specimens, namely, three fully adult *males*, one *female* in perfect plumage, two adult *females* in moult and one young bird with an almost entirely blue tail, and rusty margins to some of the feathers of the upper surface.

42. *Tanyiptera dea margarethae* Heine.

Crown purplish blue with a much lighter, almost silvery-blue border. Ear-coverts bright deep blue. Upperside black with a purplish-blue wash. Central rectrices blue with white spatulae. Inhabits the northern Moluccas, namely Batjan, Halmahera and Morty. Specimens from the latter island have very dark crowns, but we are able to match them with a specimen from Halmahera.

We have the following 25 specimens :—

- 1 ♂ Batjan (Powell coll.).
- 4 ♂ ad., 3 ♀ Batjan (Doherty coll.).
- 1 ♀ Batjan (from Waterstradt's natives).
- 3 ♂, 1 ♀, 1 sex ?, juv. Batjan (Doherty coll.).
- 1 ad. Halmahera (from Bruijn's hunters).
- 2 ad. Halmahera (from Bruijn's hunters, per Boucard).
- 1 juv. Halmahera (from Bruijn's hunters, per Boucard).
- 1 ad. without locality.
- 3 ad., 3 juv. Morty (Dumas coll.).

Since writing the details of the *T. sabrina* group, we found that six specimens collected on Morty were taken at the same time as the five *doris*. This confirms our contention that the white-backed *sabrina* group forms a distinct species from the dark-backed *T. dea* group.

43. *Tanysiptera dea acis* Wall.

This is the racket-tailed kingfisher of the island of Buru. Count Salvadori has united this form most wrongly with *T. dea dea*, from which it differs very much, as described by one of us in Nov. Zool. 1900, p. 233. It is much nearer related to *T. dea margarethae*, from which it differs merely by its black (not blue) ear-coverts and sides of the head, slightly larger size, somewhat less purplish crown, and more rusty buff underside when immature. The buff on the underside seems only to be absent in fully adult birds. We have received two fully adult, one immature, and one quite young bird from Buru (Nov. Zool. 1900, p. 233). Dr. Sharpe (*Cat. B. Brit. Mus.* XVII. p. 305) has rightly kept this form separated, but he did not place it in a natural position, because it is most closely allied to *margarethae*, and not to *hydrocharis* or *elliotti*, between which two it stands in the Catalogue of Birds.

44. *Tanysiptera dea obiensis* Salvad.

Evidently nearest allied to *T. d. margarethae*, but easily distinguishable by its brilliant glossy cobalt-blue crown without a distinct lighter border and lesser upper wing-coverts, these feathers having a lighter blue mesial line. Bill strong and long. Back dull blue-black. Rectrices white, with a more or less wide, dull blue border to the outer webs, and sometimes a very narrow border to the tips of the inner webs, central rectrices blue with white rackets and generally more or less white, in form of very variable, irregular patches, on the basal third or half. Only known from the Obi group, central Moluccas.

We have a fine series, namely :—

9 ♂ ad., 4 ♀ ad., 4 juv. Obi Major (W. Doherty coll.). "Iris deep brown. Feet brownish-green. Bill deep vermilion."

4 ♂ ad., 2 ♀ ad., 1 ♂ juv. Obi Major (H. Guillemard and Powell coll.).

2 ♂ ♀ Bisa Island (H. Guillemard coll.).

45. *Tanysiptera dea hydrocharis* Gray.

Although easily distinguishable from all its allies, we consider that *hydrocharis* is also a subspecies of *dea*. There is no new or remarkable feature to separate it by. It agrees most with *acis* and *margarethae*, but differs in its dwarfed size, very deep blue lesser upper wing-coverts, and blue-black lateral rectrices without any white. The crown is very deep blue, encircled with a lighter blue line. This form is only known from the Aru Islands.

We have the following skins :—

2 ad., 1 juv. Wanambai, Arn Islands (Capt. Cayley Webster coll.).

♂ ad. Wokan, Arn (H. Kühn coll.). "Iris coffee-brown. Feet pale greenish-grey. Bill coral-red."

46. *Tanysiptera dea galatea* Gray.

This form has the crown and nape brilliant ultramarine-blue without distinct lighter blue edges. Sides of head and ear-coverts deep blackish-blue, not black. Back deep blue. Central rectrices blue, rackets white.